

COLOR MONITOR SERVICE MANUAL

CHASSIS NO. : LP69G

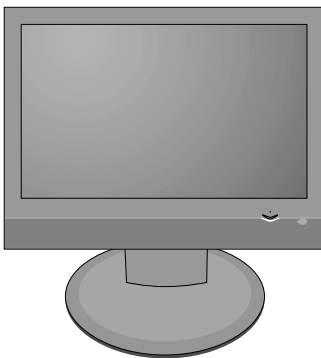
MODEL: FLATRON M198WA (M198WA-BMH.AMLP)**

FLATRON M228WA (M228WA-BMH.AMLP)**

*() **Same model for Service

CAUTION

BEFORE SERVICING THE UNIT,
READ THE **SAFETY PRECAUTIONS** IN THIS MANUAL.






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PRECAUTION

WARNING FOR THE SAFETY-RELATED COMPONENT.

- There are some special components used in LCD monitor that are important for safety. **These parts are marked  on the schematic diagram and the replacement parts list.** It is essential that these critical parts should be replaced with the manufacturer's specified parts to prevent electric shock, fire or other hazard.
- Do not modify original design without obtaining written permission from manufacturer or you will void the original parts and labor guarantee.

TAKE CARE DURING HANDLING THE LCD MODULE WITH BACKLIGHT UNIT.

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body are grounded through wrist band.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- The module not be exposed to the direct sunlight.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel become dirty, please wipe it off with a softmaterial. (Cleaning with a dirty or rough cloth may damage the panel.)

CAUTION

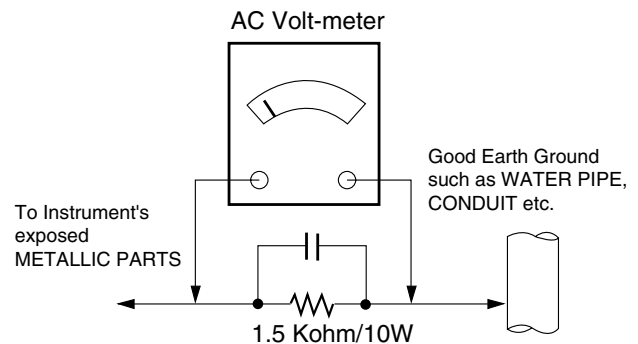
Please use only a plastic screwdriver to protect yourself from shock hazard during service operation.

WARNING

BE CAREFUL ELECTRIC SHOCK !

- If you want to replace with the new backlight (CCFL) or inverter circuit, must disconnect the AC adapter because high voltage appears at inverter circuit about 650Vrms.
- Handle with care wires or connectors of the inverter circuit. If the wires are pressed cause short and may burn or take fire.

Leakage Current Hot Check Circuit



SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
 - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
 - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.

CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

- d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe.
Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

CAUTION: This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts is not required.

6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.

Always remove the test receiver ground lead last.

9. Use with this receiver only the test fixtures specified in this service manual.

CAUTION: Do not connect the test fixture ground strap to any heat sink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500°F to 600°F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle.

Do not use freon-propelled spray-on cleaners.

5. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach normal temperature.
(500°F to 600°F)
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.

CAUTION: Work quickly to avoid overheating the circuitboard printed foil.

6. Use the following soldering technique.
 - a. Allow the soldering iron tip to reach a normal temperature (500°F to 600°F)
 - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
 - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil.

- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor

Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device

Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor

Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.

CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife.
Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.

Carefully crimp and solder the connections.

CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

1. Application range

This specification is applied to 19"/22" Wide Monitor TV used LP69G chassis.

2. Requirement for Test

Each part is tested as below without special appointment.

(1) Power Voltage : Standard input voltage (100~240V @, 50/60Hz)

*Standard Voltage of each products is marked by models.

(2) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.

(3) The receiver must be operated for about 20 minutes prior to the adjustment.

3. Test method

3.1 Performance : LGE test method followed

3.2 Demanded other specification

Safety : CE, IEC Specification

EMC : CE, IEC

4. General Specification(TV)

4-1. General Specification

4.1.1 TV

No	Item	Specification	Remark
1	Video input applicable system	NTSC, NTSC 4.43	
2	Receivable Broadcasting System	PAL N/M, NTSC M	CHILE
3	RF Input Channel	VHF : 2 ~ 13 UHF : 14 ~ 69 CATV : 1 ~ 125	PAL N/M, NTSC
4	Input Voltage	AC 100-240V, 50Hz/60Hz	
5	Market	CHILE	
6	Tuning System	FS	PAL N/M, NTSC
7	Operating Environment	Temp : 10°C~ 35°C Humidity : 20% ~ 80%	
8	Storage Environment	Temp : -10°C ~ 60°C non condensing Humidity : 5%~90% non condensing	
9	Display	LCD Module	

4.1.2 RGB/DVI

No.	Item		Specification				Remark
1	Supported Sync. Type		Separate Sync., Digital				
2	Operating Frequency		Analog	Horizontal	28 ~ 83kHz		
				Vertical	56 ~ 75 Hz		
			Digital	Horizontal	28 ~ 83kHz		
				Vertical	56 ~ 75 Hz		
3	Resolution(M198WA)		Analog	Max.	1440 x 900 @ 75Hz		
				Recommend	1440 x 900 @ 60Hz		
			Digital	Max.	1440 x 900 @ 60Hz		
				Recommend	1440 x 900 @ 60Hz		
	Resolution(M228WA)		Analog	Max.	1680 x 1050 @ 60Hz		
				Recommend	1680 x 1050 @ 60Hz		
			Digital	Max.	1680 x 1050 @ 60Hz		
				Recommend	1680 x 1050 @ 60Hz		
4	Input Voltage		Voltage :100 - 240 Vac, 50 or 60Hz				
5	Inrush Current		Cold Start : 50 A Hot : 120 A				
6	Operating Condition		Sync (H/V)	Video	LED	Wattage	
	Power S/W On	On mode	On/On	Active	Blue	60W	Max.
			On/On	Active	Blue	50W	Typ.
		Sleep mode	Off/On	Off	Amber	1W	
			On/Off				
		Power S/W Off	Off mode	-	Off	Off	1W
7	MTBF		50,000 HRS with 90% Confidence level				Lamp Life : 50,000 Hours(min)
8	Using Altitude		5,000 m (for Reliability) 3,000m(for FOS)				
9	Operating Environment		Temp : 10°C ~ 35°C				
			Humidity : 20% ~ 80%				
10	Storage Environment		Temp : -10°C ~ 60°C non condensing				
			Humidity : 5% ~ 90% non condensing				

4-2. Module Specification(LPL LM190WX1-TLC1, P/N:EAJ36290801 (ZBD)) - M198WA

No.	Item	Min	Typ.	Max	Unit	Remark
1.	Type	TFT Color LCD Module				
2.	Active Display area	410.4 (H) x 256.5 (V)			mm	
3.	Outline dimension	427.2 (H) x 277.4 (V) x17.0 (D)			mm	Typ
4.	Pixel pitch	0.285mm (H) x 0.285mm (V) x RGB			mm	
5.	Color arrangement	RGB vertical stripe				
6.	Color Depth	16.7M color				
7.	Electrical Interface	LVDS				
8.	Surface Treatment	Hard coating(3H) & Anti-glare(Haze 25)				
9.	Operating Mode	Normally White				
10.	Back light Unit	4 CCFL (4 lamps)				
11.	R/T	R.T : 1.3ms + R.T : 3.7ms				Typ.

4-2. Module Specification(LPL LM220WE1-TLA1, P/N:EAJ33945801 (ZBD)) - M228WA

No.	Item	Min	Typ.	Max	Unit	Remark
1.	Type	TFT Color LCD Module				
2.	Active Display area	473.76 (H) x 296.1 (V)			mm	
3.	Outline dimension	493.7 (H) x 320.1 (V) x16.5 (D)			mm	Typ
4.	Pixel pitch	0.282mm (H) x 0.282mm (V) x RGB			mm	
5.	Color arrangement	RGB vertical stripe				
6.	Color Depth	16.7M color				
7.	Electrical Interface	LVDS				
8.	Surface Treatment	Hard coating(3H) & Anti-glare(Haze 25)				
9.	Operating Mode	Normally White				
10.	Back light Unit	4 CCFL (4 lamps)				
11.	R/T	R.T : 1.3ms + R.T : 3.7ms				Typ.

4-3. Optical characteristic specifications

4.3.1 Optical Characteristic - M198WA

No.	Item	Specification				Remark
			Min	Typ	Max	
1	Viewing Angle <CR≥10>	R/L U/D	75/75 70/70	88/88 85/85		
2	Luminance	Luminance (cd/m ²)	RGB-PC	250	300	PSM:Dynamic, CSM: 6500K Full White (100IRE)
			AV/TV Component	200	250	PSM:Dynamic, CSM:Cool Full White (100IRE)
		White Luminance Uniformity		75		
3	Contrast Ratio	CR	RGB-PC/ AV/TV/ Component	500	850	At DFC Mode Typ. 3000:1, Min. 2400:1
4	CIE Color Coordinates	WHITE	Wx	Typ. -0.03	0.313	In RGB-PC input PSM : Dynamic CSM : 6500K White (100 IRE)
			Wy		0.329	
		RED	Rx		0.639	
			Ry		0.342	
		GREEN	Gx		0.297	
			Gy		0.615	
		BLUE	Bx		0.146	
			By		0.068	
		WHITE	Wx	Typ. -0.015	0.285	In AV/Component/TV input PSM : Dynamic CSM : Cool White (85 IRE)
			Wy		0.293	
		RED	Rx		0.639	
			Ry		0.342	
		GREEN	Gx		0.297	
			Gy		0.615	
		BLUE	Bx		0.146	
			By		0.068	

4.3.1 Optical Characteristic - M228WA

No.	Item	Specification				Remark	
			Min	Typ	Max		
1	Viewing Angle	R/L		70/70	80/80		
	<CR≥10>	U/D		60/70	75/85		
2	Luminance	Luminance (cd/m²)	RGB-PC	250	300		PSM:Dynamic, CSM: 6500K Full White (100IRE)
			AV/TV Component	200	250		PSM:Dynamic, CSM:Cool Full White (100IRE)
		White Luminance Uniformity		75			
3	Contrast Ratio	CR	RGB-PC/ AV/TV/ Component	500	800		At DFC Mode Typ. 3000:1, Min. 2400:1
4	CIE Color Coordinates	WHITE	Wx	Typ. -0.03	0.313	Typ. +0.03	In RGB-PC input PSM : Dynamic CSM : 6500K White (100 IRE)
			Wy		0.329		
		RED	Rx		0.635		
			Ry		0.342		
		GREEN	Gx		0.292		
			Gy		0.611		
		BLUE	Bx		0.147		
			By		0.070		
		WHITE	Wx	Typ. -0.015	0.285	Typ. +0.015	In AV/Component/TV input PSM : Dynamic CSM : Cool White (85 IRE)
			Wy		0.293		
		RED	Rx		0.635		
			Ry		0.342		
		GREEN	Gx		0.292		
			Gy		0.611		
		BLUE	Bx		0.147		
			By		0.070		

4-4. Model Specification

No	Item	Specification	Remark
1.	Market	CHILE	
2.	Broadcasting system	PAL N/M, NTSC M	
3	RF Input Channel	VHF : 2 ~ 13 UHF : 14 ~ 69 CATV : 1 ~ 125	NTSC
4.	CVBS Input (1EA)	PAL N/M, NTSC	3 System(Rear) :PAL50/60, NTSC
5.	S-Video Input (1EA)	PAL N/M, NTSC	3 System(Rear) :PAL50/60, NTSC
6.	Component Input (1EA)	Y/ Pb/Pr	480i/480p/576i/576p/720p/1080i
7.	RGB Input (1EA)	RGB-PC	Max 1440 * 900@75Hz- M198WA Max 1680 * 1050@60Hz- M228WA
		RGB-DTV	480p, 576p, 720p, 1080i
8.	DVI Input (1EA)	DVI-PC	Max 1440 * 900@60Hz- M198WA Max 1680 * 1050@60Hz- M228WA
		DVI-DTV	480p, 576p, 720p, 1080i
9.	Audio Input (3 EA)	CVBS, PC Audio, Component	L/R Input

5. Component Video Input (Y, PB, PR)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
1.	720*480	15.73	59.94	13.500	480i
2.	720*480	15.75	60.00	13.514	480i
3.	720*576	15.625	50.00	13.500	576i
4.	720*480	31.47	59.94	27.000	480P
5.	720*480	31.50	60.00	27.027	480P
6.	720*576	31.25	50.00	27.000	576P
7.	1280*720	44.96	59.94	74.176	720P
8.	1280*720	45.00	60.00	74.250	720P
9.	1280*720	37.50	50.00	74.25	720P
10.	1920*1080	33.72	59.94	74.176	1080i
11.	1920*1080	33.75	60.00	74.250	1080i
12.	1920*1080	28.125	50.00	74.250	1080i

6. RGB Input (PC)-M198WA

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)
1	720*400	31.468	70.08	28.321
2	640*480	31.469	59.94	25.175
3	640*480	37.5	75	31.5
4	800*600	37.879	60.317	40.0
5	800*600	46.875	75.0	49.5
6	1024*768	48.363	60.0	65.0
7	1024*768	60.123	75.029	78.75
8	1152*864	67.500	75.000	108.0
9	1280*1024	63.981	60.02	108.0
10	1280*1024	79.976	75.035	135.0
11	1440*900	55.5	59.90	88.750
12	1440*900	55.935	59.887	106.50
13	1440*900	70.635	74.984	136.75

*M228WA

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)
1	720*400	31.468	70.08	28.321
2	640*480	31.469	59.94	25.175
3	640*480	37.5	75	31.5
4	800*600	37.879	60.317	40.0
5	800*600	46.875	75.0	49.5
6	1024*768	48.363	60.0	65.0
7	1024*768	60.123	75.029	78.75
8	1152*864	67.500	75.000	108.0
9	1280*1024	63.981	60.02	108.0
10	1280*1024	79.976	75.035	135.0
11	1680*1050	64.674	59.883	119.0
12	1680*1050	65.290	59.954	146.25

7. RGB input (DTV)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
1.	720*480	31.47	59.94	27.000	480P
2.	720*480	31.50	60.00	27.027	480P
3.	720*576	31.25	50.00	27.000	576P
4.	1280*720	37.5	50.00	74.250	720P
5.	1280*720	44.96	59.94	74.176	720P
6.	1280*720	45.00	60.00	74.250	720P
7.	1920*1080	33.72	59.94	74.176	1080i
8.	1920*1080	33.75	60.00	74.250	1080i
9.	1920*1080	28.125	50.00	74.250	1080i

8. DVI input (PC)-M198WA

No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)
1	720*400	31.468	70.08	28.321
2	640*480	31.469	59.94	25.175
3	640*480	37.5	75	31.5
4	800*600	37.879	60.317	40.0
5	800*600	46.875	75.0	49.5
6	1024*768	48.363	60.0	65.0
7	1024*768	60.123	75.029	78.75
8	1152*864	67.500	75.000	108.0
9	1280*1024	63.981	60.02	108.0
10	1280*1024	79.976	75.035	135.0
11	1440*900	55.5	59.90	88.750
12	1440*900	55.935	59.887	106.50

* M228WA

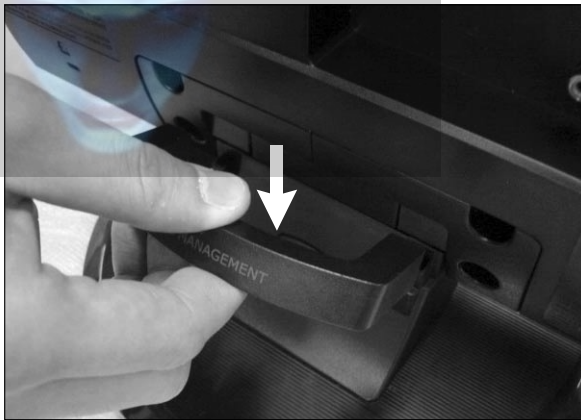
No	Resolution	H-freq(kHz)	V-freq.(Hz)	Pixel clock(MHz)
1	720*400	31.468	70.08	28.321
2	640*480	31.469	59.94	25.175
3	640*480	37.5	75	31.5
4	800*600	37.879	60.317	40.0
5	800*600	46.875	75.0	49.5
6	1024*768	48.363	60.0	65.0
7	1024*768	60.123	75.029	78.75
8	1152*864	67.500	75.000	108.0
9	1280*1024	63.981	60.02	108.0
10	1280*1024	79.976	75.035	135.0
11	1680*1050	64.674	59.883	119.0
12	1680*1050	65.290	59.954	146.25

9. DVI input (DTV)

No	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed
1.	720*480	31.47	59.94	27.000	480P
2.	720*480	31.50	60.00	27.027	480P
3.	720*576	31.25	50.00	27.000	576P
4.	1280*720	37.5	50.00	74.250	720P
5.	1280*720	44.96	59.94	74.176	720P
6.	1280*720	45.00	60.00	74.250	720P
7.	1920*1080	33.72	59.94	74.176	1080i
8.	1920*1080	33.75	60.00	74.250	1080i
9.	1920*1080	28.125	50.00	74.250	1080i

DISASSEMBLY

1



1. Push down slightly to disassembly it.
2. After push the cable management like above fig.(Downward), Disassembly the Cable management with pulling it upward.
3. Disassembly Cable Holder.

2



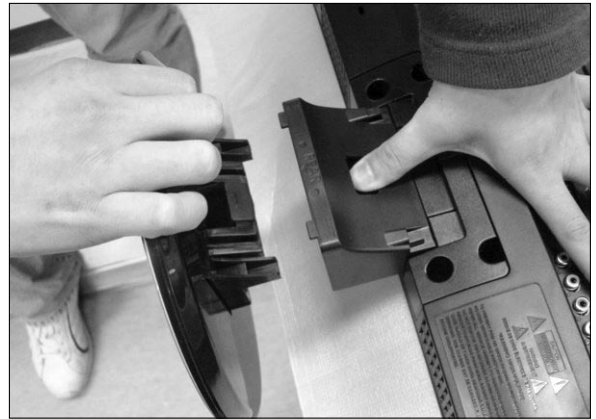
Push the button.

3



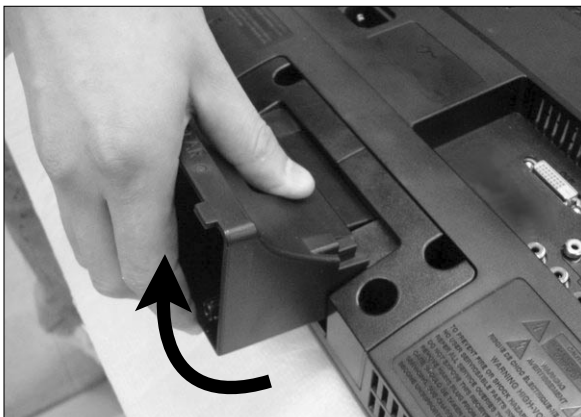
Hold the stand base.

4



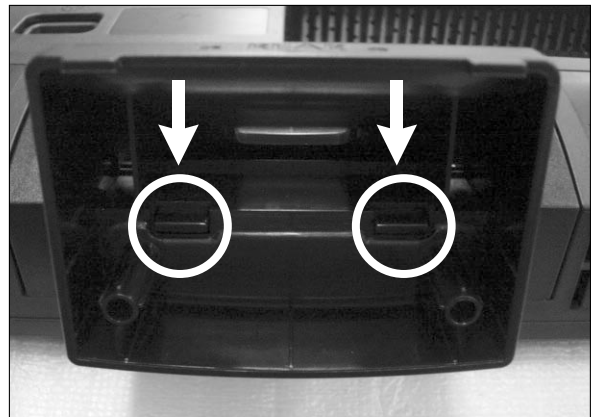
Disassembly Stand base.

5



Remove base body Like a picture.

6



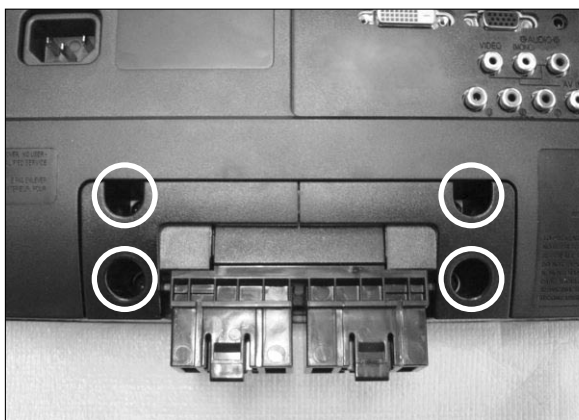
Push 2 latches Like a picture.

7



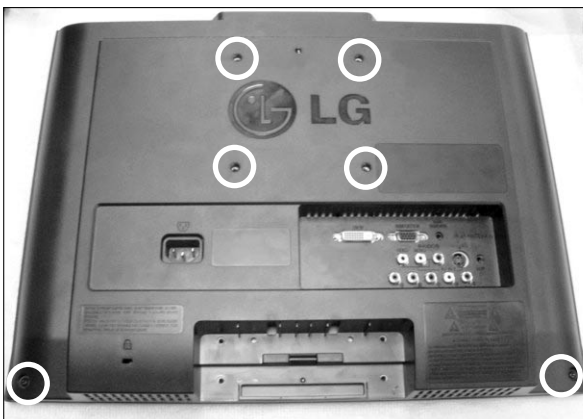
Pull base body to separate from set during pressing 2 latches.

8



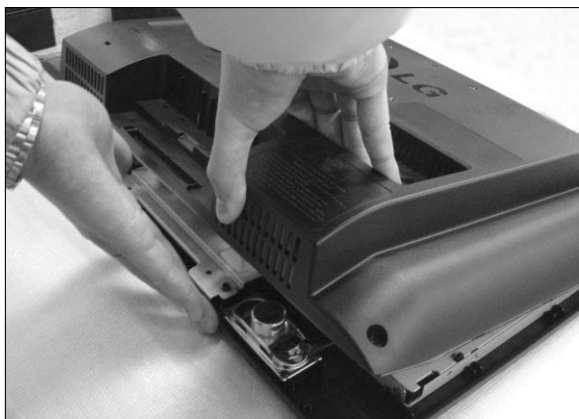
1. Remove the screws.
2. Disassembly Hinge Cover.

9



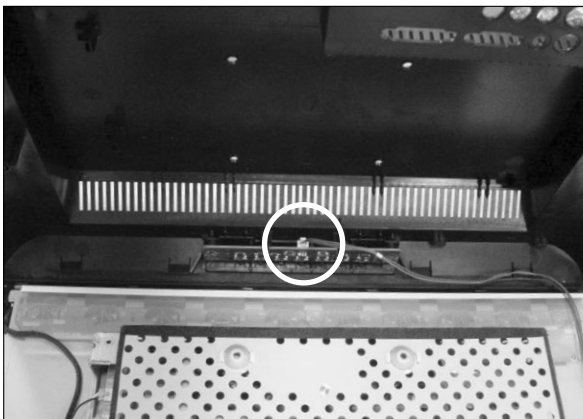
Remove the screws.

10



Disassembly back cover.

11



Pull the connector.

ADJUSTMENT INSTRUCTION

1. Application Range

This specification sheet is applied to 19"/ 20"/ 22" LCD Monitor TV which is manufactured in TV (or Monitor) Factory or is produced on the basis of this data.

2. Specification

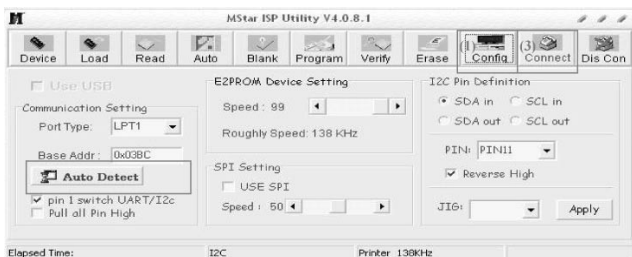
- 1) The adjustment is according to the order which is designated and which must be followed, according to the plan which can be changed only on agreeing.
- 2) Power Adjustment : Free Voltage
- 3) Magnetic Field Condition : Nil.
- 4) Input signal Unit : Product Specification Standard
- 5) Reserve after operation : Above 30 Minutes
- 6) Adjustment equipments : Color Analyzer(CA-210 or CA-110), Pattern Generator (MSPG-925L or Equivalent), DDC Adjustment Jig equipment, SVC remote controller

3. Main PCB check process

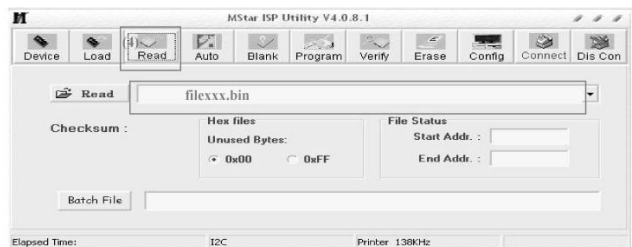
* APC - After Manual-Insult, executing APC

3.1. Download

- 1) Execute ISP program "Mstar ISP Utility" and then click "Config" tab.
- 2) Set as below, and then click "Auto Detect" and check "OK" message.
If display "Error", Check connect computer, jig, and set.
- 3) Click "Connect" tab.
If display "Can't", Check connect computer, jig, and set.



- 4) Click "Read" tab, and then load download file(XXXX.bin) by clicking "Read".



- 5) Click "Auto" tab and set as below
- 6) click "Run".
- 7) After downloading, check "OK" message.



3.2. ADC Process

* If a scaler IC changed for PCB repairing, it is need to do ADC process at all times.

(1) PC input ADC

- 1) Auto RGB Gain/Offset Adjustment
 - Convert to PC in Input-source
 - Signal equipment displays
Output Voltage : 700 mVp-p
Impress Resolution XGA (1024 x 768 @ 60Hz)
Model : 60 in Pattern Generator
Pattern : 29 in Pattern Generator (MSPG-925 SERISE)
[gray pattern that left & right is black and center is white signal (Refer below picture)].



<Adjustment pattern (PC)>

- Adjust by commanding AUTO_COLOR_ADJUST (0xF1) 0x00 0x02 instruction.

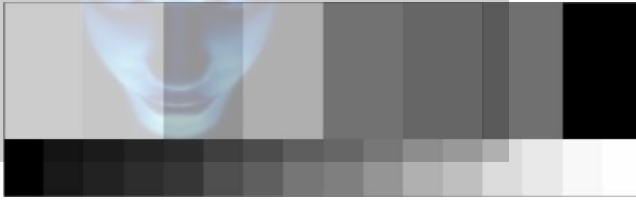
2) Confirmation

- We confirm whether "0x8B,0x8C" address of EEPROM "0xB4" is "0xAA" or not.
- If "0x8B,0x8C" address of EEPROM "0xB4" isn't "0xAA", we adjust once more.
- We can confirm the ADC values from "0x00~0x05" addresses in a page "0xB4"

* Manual ADC process using Service Remocon. After enter Service Mode by pushing "INSTANT" key, execute "Auto-RGB" by pushing "▶" key at "Auto-RGB".

(2) COMPONENT input ADC

- 1) Component Gain/Offset Adjustment
 - Convert to Component in Input-source
 - Signal equipment displays
Impress Resolution 480P
MODEL : 212 in Pattern Generator
(480p Mode, Y : 100%, Pb/Pr : 75%)
PATTERN : 08 in Pattern Generator
(MSPG-925 SERISE)



<Adjustment pattern (COMPONENT)>

- Adjust by commanding AUTO_COLOR_ADJUST (0xF1) 0x00 0x02 instruction.

2) Confirmation

- We confirm whether "0x8D,0x8E" address of EEPROM "0xB4" is "0xAA" or not.
- If "0x8D,0x8E" address of EEPROM "0xB4" isn't "0xAA", we adjust once more.
- We can confirm the ADC values from "0x00~0x05" addresses in a page "0xB4".

3.3. Function Check

(1) Check display and sound

- Check Input and Signal items. (cf. work instructions)
- 1) TV
- 2) AV (CVBS/ S-Video)
- 3) COMPONENT (480P)
- 4) RGB (PC : 1024 x 768 @ 60hz)
- 5) DVI
- 6) PC Audio In and H/P Out
- * Display and Sound check is executed by Remote controller.

4. Total Assembly line process

4.1. Adjustment Preparation

- (1) Above 30 minutes H/run in RF no signal
- (2) 15 Pin D-Sub Jack is connected to the signal of Pattern Generator.

4.2. Confirm color coordinate of RGB

* Check White Balance

- Set Input to RGB.
- Input signal : (1024 x 768 @ 60Hz), Full white 255/255 gray level (100 IRE, Model : 60, Pattern : 4 at MSPG925L)
- Set CSM : 6500k
- Confirm whether $x = 0.313 \pm 0.03$, $y = 0.329 \pm 0.03$ or not.
- Confirm whether luminance over 200cd/m²
- Set CSM : 9300k
- Confirm whether $x = 0.283 \pm 0.03$, $y = 0.298 \pm 0.03$ or not.

* Check sRGB

- Set Input to RGB.
- Input signal : (1024 x 768 @ 60Hz)
Full white 255/255 gray level (100 IRE, Model : 60, Pattern : 4 at MSPG925L)
- Set CSM : sRGB
- Confirm whether $x = 0.313 \pm 0.03$, $y = 0.329 \pm 0.03$ or not.
- Confirm whether luminance = 180 ± 50 cd/m²

4.3. Confirm color coordinate of AV

- (1) Set Input to AV
- (2) Input signal : CVBS, NTSC @ 60Hz
Full white 216/255 gray level (85 IRE, Model : 202, Pattern : 78 at MSPG925L)
- (3) Set PSM : Dynamic / CSM : Cool
- (4) Confirm whether $x = 0.285 \pm 0.03$, $y = 0.293 \pm 0.03$ or not.

4.4. Confirm color coordinate of component

- (1) Set Input to COMPONENT.
- (2) Input signal : 480P
Full white 216/255 gray level (85 IRE Model : 212, Pattern : 78 at MSPG925L)
- (3) Set PSM : Dynamic / CSM : Cool
- (4) Confirm whether $x = 0.285 \pm 0.03$, $y = 0.293 \pm 0.03$ or not.

4.5. Confirm Auto adjustment operation.

- (1) Input 1 Dot on/off & Rectangle Pattern at Model 60 (1024 x 768@60Hz).
- (2) Confirm adjustment operation by changing Clock, Phase, H/V Position.
- (3) Check Clock, Phase by pressing AUTO Key after varying the Clock & the Phase

4.6. Other quality

- Confirm that each items satisfy under standard condition that was written product spec.

(1) AV

- 1) Select input AV (S-video) and whether picture is displayed or not
- 2) Select input AV (CVBS) and whether picture is displayed or not.

(2) TV

- Select input TV and check below item
- * In Gumi Factory
- 04 - Stereo Sound check
- 63 - Dual Sound check

(3) RGB

*M198WA

- Select input RGB model 112(1440*900@60hz), 64 Gray Scale pattern and whether picture is displayed or not

*M208WA / M228WA

- Select input RGB model 122(1680*1050@60hz), 64Gray Scale pattern and whether picture is display or not

(4) COMPONENT

- Select input COMPONENT and whether picture is displayed or not.

(5) DVI

*M198WA

- Select input DVI model 112(1440*900@60hz), 64 Gray Scale pattern and whether picture is displayed or not

*M208WA / M228WA

- Select input DVI model 122(1680*1050@60hz), 64Gray pattern and whether picture is displayed or not.

4.7. DPM operation confirmation

- Check if Power LED Color and Power Consumption operate as standard.

- (1) Set Input to RGB and connect D-sub cable to set.
- (2) Measurement Condition : 230V@ 50Hz (Analog)
- (3) Confirm DPM operation at the state of screen without Signal

4.8 DDC EDID Write

- 1) Connect D-sub Signal Cable to D-Sub Jack.
- 2) Connect HDMI Signal Cable to DVI Jack.
- 3) Write EDID DATA to EEPROM(24C02) by using DDC2B protocol.
- 4) Check whether written EDID data is correct or not. (refer to Product spec).

(1) M198WA EDID DATA

1) ANALOG DATA 128Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	35	4B	01	01	01	01
0x01	01	10	01	03	0C	29	1A	78	EA	9B	B6	A4	53	4B	9D	24
0x02	14	4F	54	A7	6F	80	95	0F	81	80	81	40	71	4F	01	01
0x03	01	01	01	01	01	01	9A	29	A0	D0	51	64	22	30	50	98
0x04	36	00	00	98	FF	10	00	00	1C	00	00	00	FD	00	38	4B
0x05	53	0E	00	0A	20	20	20	20	20	20	20	00	00	00	FC	00
0x06	31	39	38	57	41	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	00	6C

2) DIGITAL DATA 256Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	36	4B	01	01	01	01
0x01	01	10	01	03	0C	29	1A	78	EA	9B	B6	A4	53	4B	9D	24
0x02	14	4F	54	A7	6F	80	95	00	81	80	81	40	71	4F	01	01
0x03	01	01	01	01	01	01	9A	29	A0	D0	51	64	22	30	50	98
0x04	36	00	00	98	FF	10	00	00	1C	00	00	00	FD	00	38	4B
0x05	53	0E	00	0A	20	20	20	20	20	20	20	00	00	00	FC	00
0x06	31	39	38	57	41	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	00	27

(2) M208WA EDID DATA

1) ANALOG DATA 128Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	35	4E	01	01	01	01
0x01	01	10	01	03	0C	2B	1B	78	EA	CF	C5	A3	5A	49	A0	25
0x02	12	50	54	A7	6B	80	95	0F	95	00	81	80	81	40	71	4F
0x03	01	01	01	01	01	01	7C	2E	90	A0	60	1A	1E	40	30	20
0x04	36	00	B2	0E	11	00	00	1A	21	39	98	30	62	1A	27	40
0x05	68	B0	36	00	B2	0E	11	00	00	1C	00	00	00	FD	00	38
0x06	4B	1C	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	4D	32	30	38	57	41	0A	20	20	20	20	20	20	00	EF

2) DIGITAL DATA 256Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	62	4E	01	01	01	01
0x01	01	10	01	03	80	2B	1B	78	EA	CF	C5	A4	5A	49	A0	25
0x02	12	50	54	A7	6B	80	81	80	81	40	71	4F	01	01	01	01
0x03	01	01	01	01	01	01	7C	2E	90	A0	60	1A	1E	40	30	20
0x04	36	00	B2	0E	11	00	00	1A	21	39	98	30	62	1A	27	40
0x05	68	B0	36	00	B2	0E	11	00	00	1C	00	00	00	FD	00	38
0x06	4B	1C	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	4D	32	30	38	57	41	0A	20	20	20	20	20	20	00	AE

(3) M228WA EDID DATA

1) ANALOG DATA 128Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	3C	56	01	01	01	01
0x01	01	10	01	03	0C	2F	1E	78	EA	D4	25	A4	55	49	9B	27
0x02	13	50	54	A7	6B	80	95	0F	95	00	81	80	81	40	71	4F
0x03	01	01	01	01	01	01	7C	2E	90	A0	60	1A	1E	40	30	20
0x04	36	00	B2	0E	11	00	00	1A	21	39	98	30	62	1A	27	40
0x05	68	B0	36	00	B2	0E	11	00	00	1C	00	00	00	FD	00	38
0x06	4B	1C	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	4D	32	32	38	57	41	0A	20	20	20	20	20	20	00	A4

2) DIGITAL DATA 256Byte

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	3D	56	01	01	01	01
0x01	01	10	01	03	80	2F	1E	78	EA	D4	25	A4	55	49	9B	27
0x02	13	50	54	A7	6B	80	81	80	81	40	71	4F	01	01	01	01
0x03	01	01	01	01	01	01	7C	2E	90	A0	60	1A	1E	40	30	20
0x04	36	00	B2	0E	11	00	00	1A	21	39	98	30	62	1A	27	40
0x05	68	B0	36	00	B2	0E	11	00	00	1C	00	00	00	FD	00	38
0x06	4B	1C	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC
0x07	00	4D	32	32	38	57	41	0A	20	20	20	20	20	20	00	64

4.9. HDCP SETTING

(High-Bandwidth Digital Contents Protection)

- 1) Connect D-sub Signal Cable to D-Sub Jack.
- 2) Input HDCP key with HDCP-key- in-program.
- 3) HDCP Key value is stored on EEPROM(AT24C64) which is E00~F20 addresses of 0xBC~0xBE page.

ADH	ADL	LEN
BC	00	128
BC	80	128
BE	00	33

- 4) AC off/ on and on HDCP button of MSPG925 and confirm whether picture is displayed or not of using MSPG925.

- 5) HDCP Key value is different among the sets.

4.10. Outgoing condition Configuration

- 1) After all function test., press IN-STOP Key by SVC Remote controller. And Make Ship Condition.
- 2) When pressing IN-STOP key by SVC remocon, Green and red LED are blinked alternatively. And then Automatically turn off. (Must not AC power OFF during blinking)

4.11. Internal pressure

- Confirm whether is normal or not when between power board's ac block and GND is impacted on 1.5kV(dc) or 2.2kV(dc) for one second.

4.12 Option data setting (SVC OSD setting)

(1) Tool Option

***M198WA-BMH- Tool Option 7809**

	M198WA-BTH	REMARK
Resolution	1	WXGA+
Module	0	
TV	1	
VIDEO	1	
COMPONENT	1	
PC-RGB	1	
DVI	1	
HDMI	0	

***M208WA/M228WA-BMH Tool Option 7810**

	M208WA-BMH / M228WA-BMH	REMARK
Resolution	2	WSXGA
Module	0	
TV	1	
VIDEO	1	
COMPONENT	1	
PC-RGB	1	
DVI	1	
HDMI	0	

*** Area Option (M198WA/M208WA/M228WA-BMH) Change by suffix**

: Area Option : South America - S.Am

No.	Item	Condition	Remark
1	2HR-OFF	1	0 : 2 Hour off option -OFF
			1 : 2 Hour off option -ON
2	FACTORY-MODE	0	0 : EEPROM Write Protection On
			1 : EEPROM Write Protection Off
3	CHANNEL-MUTE	1	
RAM Delay			
1	Clock Phase	7	
2	DQS0 Phase	2	
3	DQS1 Phase	2	
4	DQS2 Phase	2	
5	DQS3 Phase	2	
Power Off History			
1	Last Power	0	
2	Remocon	0	
3	Key	0	
4	Sleep Timer	0	
5	RS232	0	
6	Off Timer	0	
7	Auto Off	0	
8	2Hour Off	0	
9	Reset	0	
ETC			
1	DFC Control	1	
2	Exit Key	0	
3	PWM DIM	255	
4	Dimming Ctl.	255	
5	DEBUG ON	0	
6	UART ON	3	
7	AGC TAKEOVER	16	
8	AGC EData	0	
9	AGC BData	0	
10	VID Lev	96	
11	SOG Level	4	

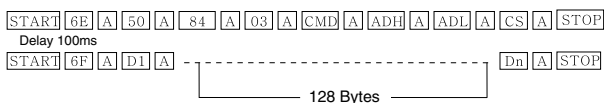
5. Adjustment Command

5.1. Adjustment Commands(LENGTH=84)

Adjustment Contents	CMD(hex)	ADR	VAL	Description
FACTORY ON	E0	00	00	Factory mode on
FACTORY OFF	E2	00	00	Factory mode off
EEPROM ALL INIT.	E4	00	00	EEPROM All clear
EEPROM Read	E7	00	00	EEPROM Read
EEPROM Write	E8	00	data	EEPROM Write by some values
COLOR SAVE (R/G/B cutoff, Drive, Contrast, Bright)	EB	00	00	Color Save
H POSITION	20	00	00 – 100	They have different range each mode, FOS Adjustment
V POSITION	30	00	00 – 100	
CLOCK	90	00	00 – 100	
PHASE	92	00	00 – 100	
R DRIVE	16	00	00 – FF	Drive adjustment
G DRIVE	18	00	00 – FF	
B DRIVE	1A	00	00 – FF	
R CUTOFF	80	00	00 – 7F	Offset adjustment
G CUTOFF	82	00	00 – 7F	
B CUTOFF	84	00	00 – 7F	
BRIGHT	10	00	00 – 3F	Bright adjustment
CONTRAST	12	00	00 – 64	Luminance adjustment
AUTO_COLOR_ADJUST	F1	00	02	Auto COLOR Adjustment
CHANGE_COLOR_TEMP	F2	00	0,1,2,3	0: COOL 1: NORMAL 2: WARM 3: USER
FACTORY_DEFAULT	F3	00	00	Factory mode off & II_SW is “1” & Input change to “TV”
AUTO_INPUT CHANGE	F4	00	0,1,2,4	0: TV 1: AV1 2: AV2 3: Component 4: RGB 5: DVI

5.2 EEPROM DATA READ

(1) Signal Table



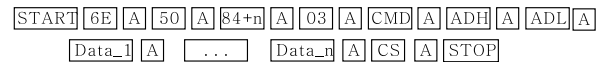
(2) Command Set

Adjustment contents	CMD(hex)	ADH(hex)	ADL(hex)	Details
EEPROM READ	E7	A0	0	0-Page 0~7F Read
			80	0-Page 80~FF Read
		A2	0	1-Page 0~7F Read
			80	1-Page 80~FF Read
		A4	0	2-Page 0~7F Read
			80	2-Page 80~FF Read
		A6	0	3-Page 0~7F Read
			80	3-Page 80~FF Read

* Purpose : To read the appointment Address of E2PROM by 128(80h)-byte

5.3. E2PROM Data Write

(1) Signal Table



LEN : 84h+Bytes

CMD : 8Eh

ADH : E2PROM Slave Address(A0,A2,A4,A6,A8), Not 00h(Reserved by BufferToEEPROM)

ADL : E2PROM Sub Address(00~FF)

Data : Write data

(2) Command Set

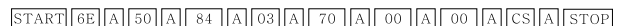
Adjustment contents	CMD(hex)	ADH(hex)	Details
EEPROM WRITE	E8	94	16-Byte Write
		84+n	n-byte Write

* Purpose

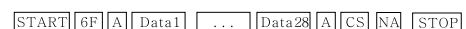
- 1) EDID write : 16-byte by 16-byte, 8 order (128-byte) write(TO “00 – 7F” of “EEPROM Page A4”).
- 2) FOS Default write : 16-mode data (HFh, HFI, VF, STD, HP, VP, Clk, ClkPh, PhFine) write.
- 3) Random Data write : write the appointment Address of E2PROM.

5.4. VRAM Read

- 1) Send CMD(70h) to read Video RAM value from MICOM And save its value to 128-Bytes Buffer(Common Buffer for the use of EDID)



- 2) Delay 500ms (Time to Wait and Read Video RAM from MICOM)



- 3) Be transmitted the contents of MICOM's 128-bytes Buffer to PC. (128th Data is the CheckSum of 127-bytes data : That's OK if the value of adding 128-bytes Data is Zero)

Windows EDID V1.0 User Manual

Operating System: MS Windows 98, 2000, XP

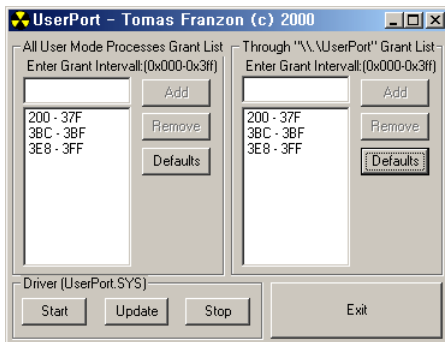
Port Setup: Windows 98 => Don't need setup

Windows 2000, XP => Need to Port Setup.

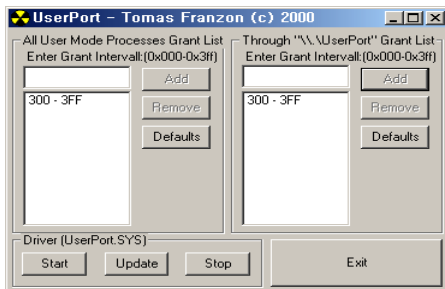
This program is available to LCD Monitor only.

1. Port Setup

- Copy "UserPort.sys" file to
"c:\WINNT\system32\drivers" folder
- Run Userport.exe



- Remove all default number
- Add 300-3FF

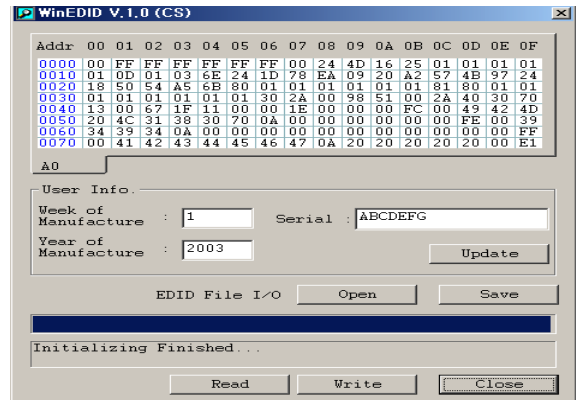


- Click Start button.
- Click Exit button.

ADJUSTMENT

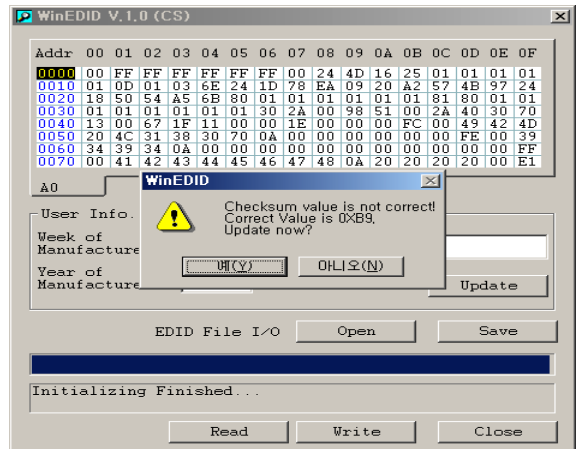
2. EDID Read & Write

1) Run WinEDID.exe



2) Edit Week of Manufacture, Year of Manufacture, Serial Number

- Input User Info Data
- Click "Update" button
- Click "Write" button



SERVICE OSD

BLUEBIRD3 - LP69G		
Version	3.00	070502
M198WA WXGA+ LPL 19W		
UTT		0
<hr/>		
Tool Option		7809
Area Option		S.Am
2HR-OFF		1
FACTORY-MODE		0
CHANNEL-MUTE		1
RAM Delay		
Power Off History		
ETC		

BLUEBIRD3 - LP69G		
Version	3.00	070502
M198WA WSXGA+ LPL 22W		
UTT		0
<hr/>		
Tool Option		7810
Area Option		S.Am
2HR-OFF		1
FACTORY-MODE		0
CHANNEL-MUTE		1
RAM Delay		
Power Off History		
ETC		

■ Description of operation

- Tool Option : Adjust Tool Option
- Area Option : Adjust Area Option
(S.Am : South America)
- 2HR OFF : If no key input is made for 2 hours, Sets the Power off
- Factory-Mode : Adjust Factory-Mode On/Off
- Channel-Mute: Adjust Channel-Mute On/Off
- RAM Delay : Adjust RAM Delay
- Power Off History : Adjust Power Off History
- ETC

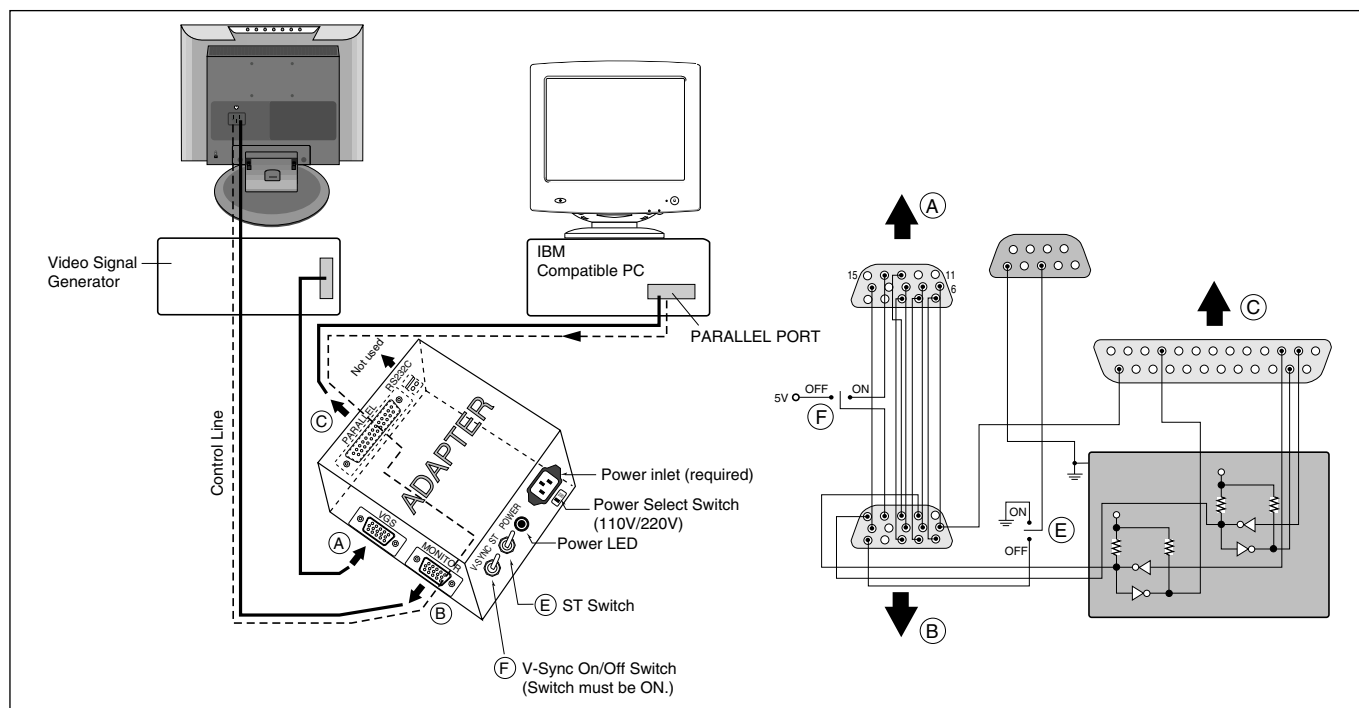
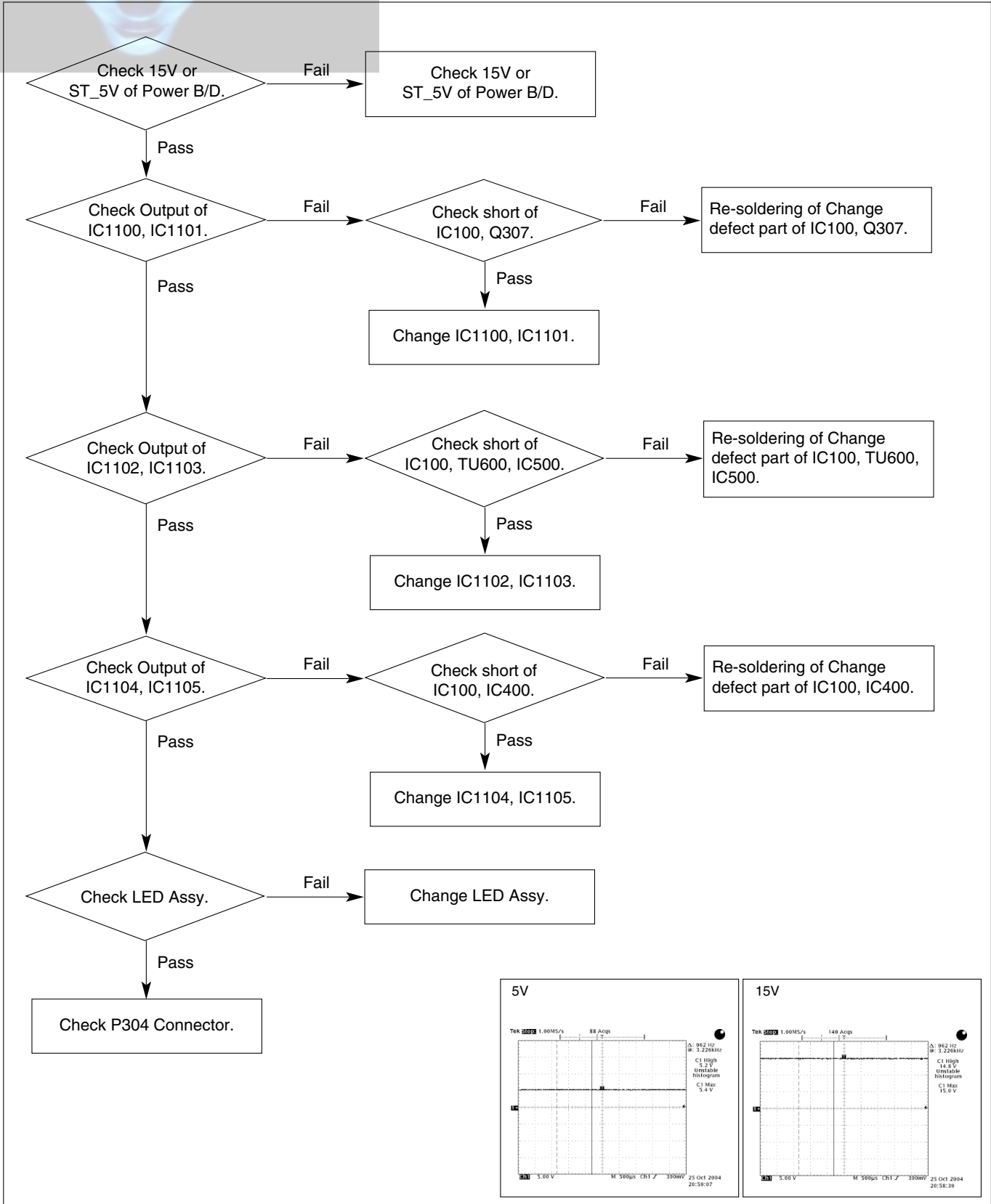
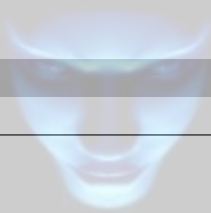


Figure 1. Cable Connection

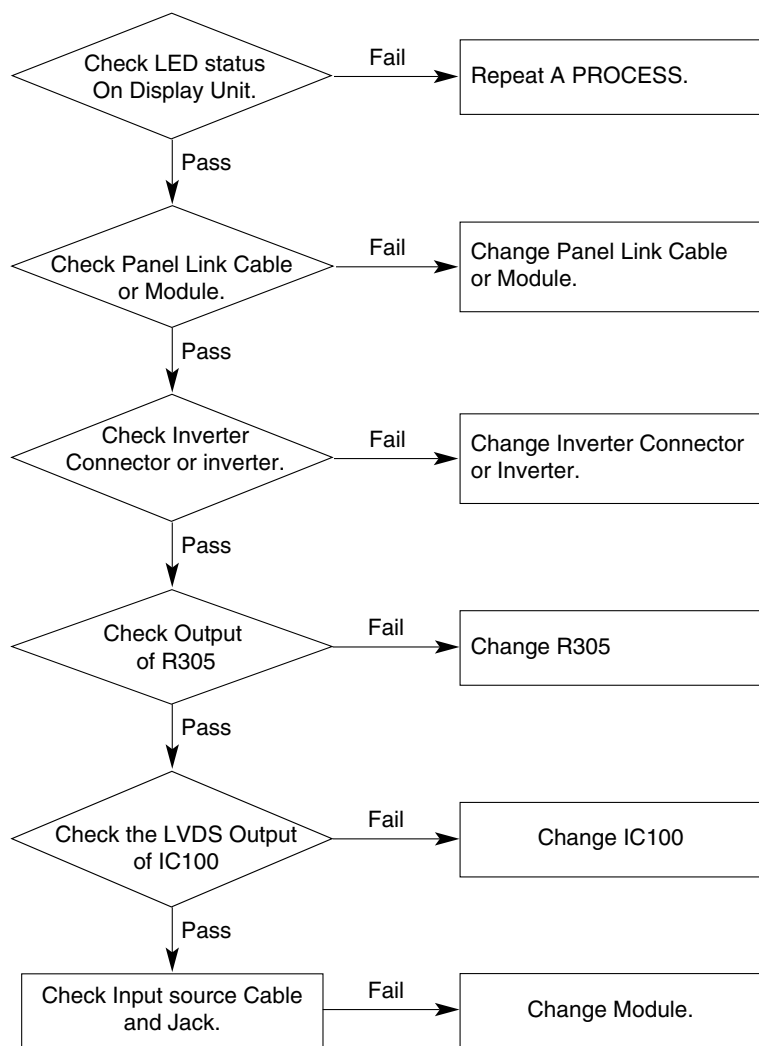
TROUBLESHOOTING GUIDE

1. NO POWER (LED INDICATOR OFF) : [A] Process

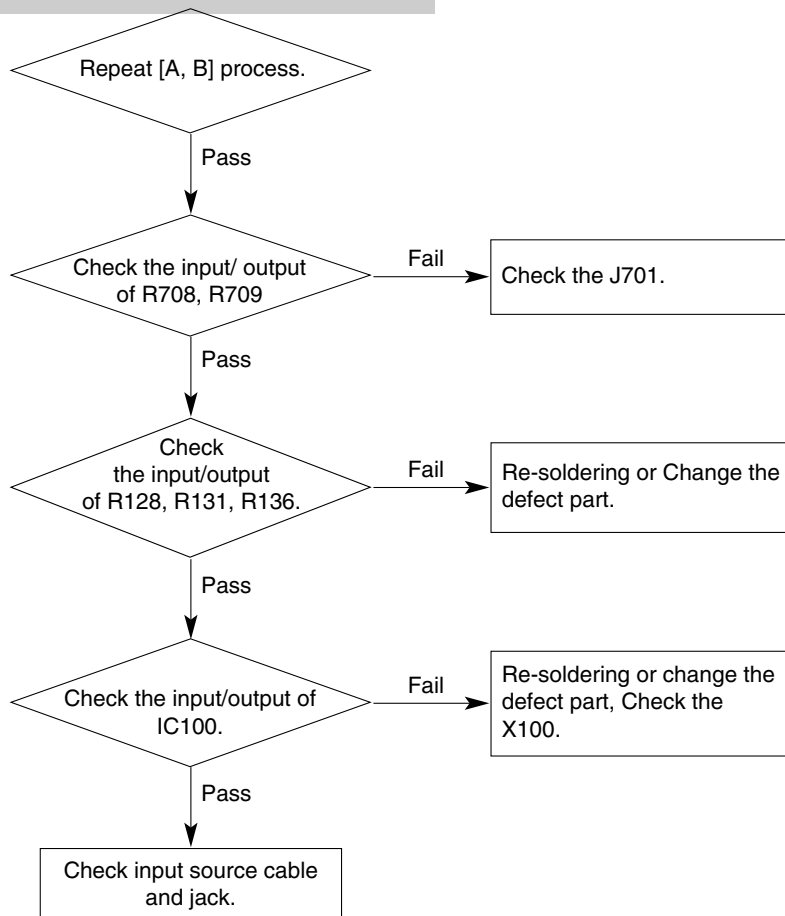




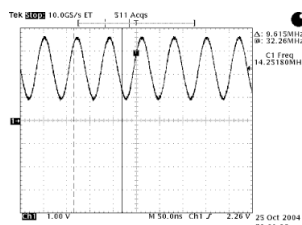
2. NO RASTER : [B] Process



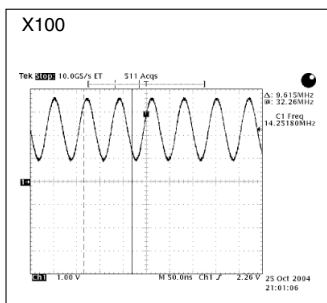
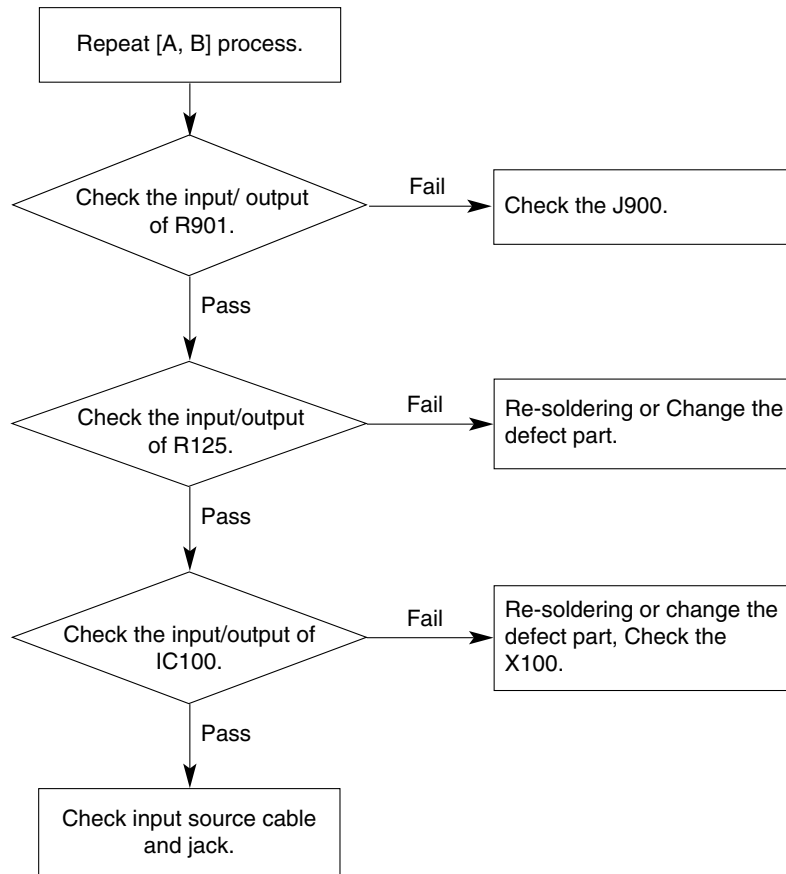
3. NO RASTER ON RGB SINGAL



X100



4. No Raster on Component Signal



5. No Raster on DVI Signal

Repeat [A, B] process.

Pass

Check the input/ output of R100.

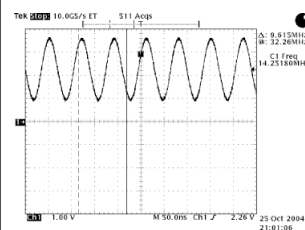
Fail

Re-soldering or change the defect part, Check the X100.

Pass

Check input source cable and jack.

X100



6. No Raster on AV(Scart in Video, S-Video) Signal

Pass

Repeat [A, B] process.

Fail

7. No Raster on TV(RF) Signal

Pass

Check short of IC100, Q307.

Fail

Check 5V of TU600. Re-Soldering or change the defect part.

Pass

Check the input/output of L804, L1002, L1003, L1004.

Fail

Change L804, L1002, L1003, L1004.

Pass

Check Output of IC1104, IC1105.

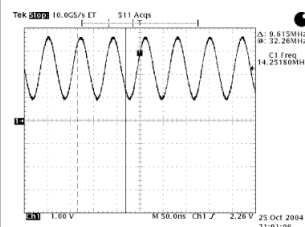
Fail

Re-soldering of Change defect part, Check the X100.

Pass

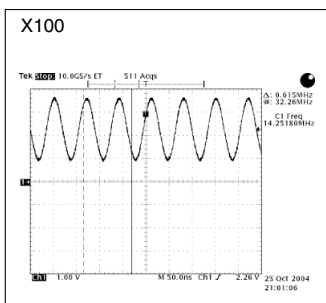
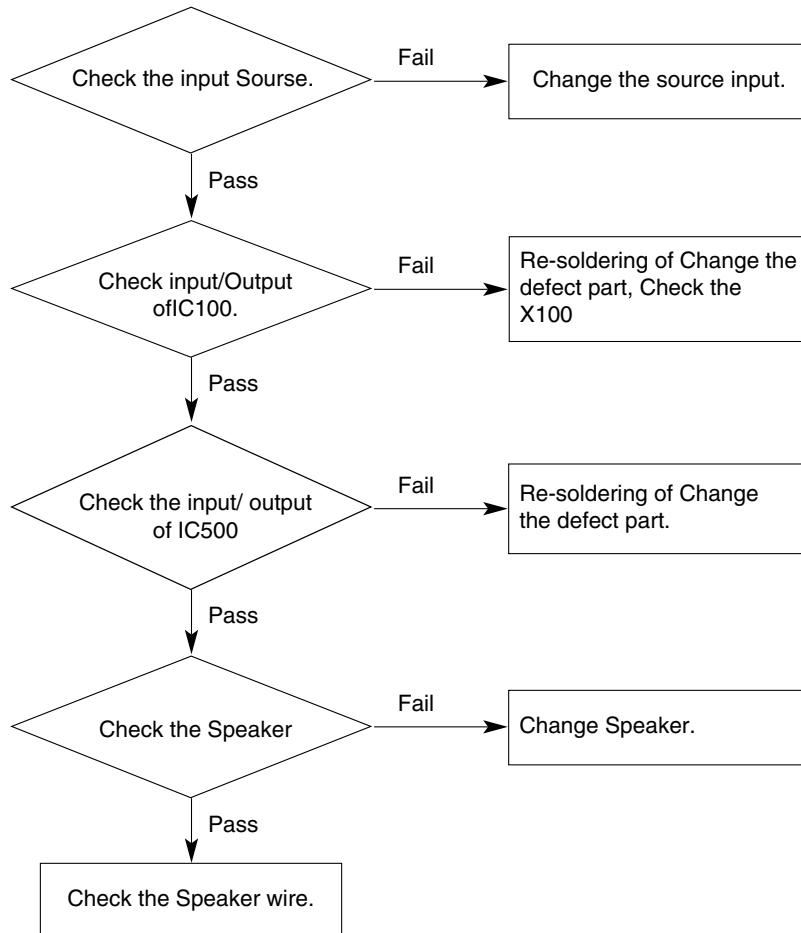
Check input source cable and jack.

X100

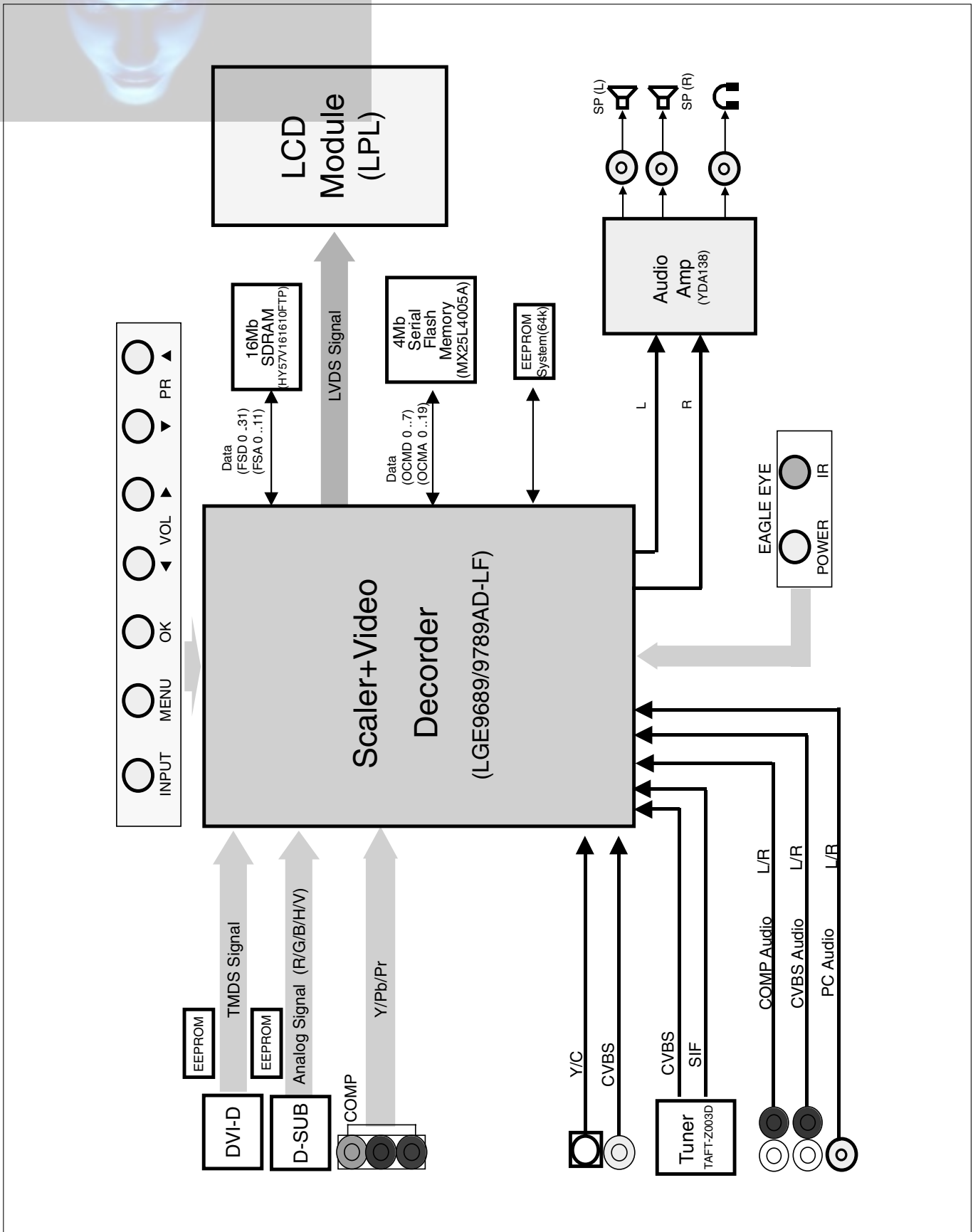




8. No sound



BLOCK DIAGRAM



DESCRIPTION OF BLOCK DIAGRAM

1. Power Supply Block (LIPS)

This Block Generates DC Voltage (5V,15V) to Main Control system from AC Power (100-240 V, 50/60 Hz, 1.0A)

2. DC/DC Converter block

DC/DC Converter convert the input 5V,15V to proper 1.8V,2.5V,3.3V,5V,10.5V for Main control system.

For shooting heat trouble, we use the DC/DC converting IC

3. Scaler + Video/Audio decoder (Scaler IC, LGE9689/9789AD-LF)

It is composed of LGE9689/9789AD-LF.

It includes AD Converter, LVDS/TMDS Transmitter, Micom, and Audio processor.

1) Video Signal - CVBS/S-Video/Component/RGB/DVI(TMDS)

This Block Selects input Video signals (like CVBS, Y/C, SCART RGB) and output RGB signal.

On decoding, We can control signal like Contrast, Brightness, Sharpness, Color, tint signals including Adaptive Comb Filter.

2) Audio Signal

This block analyzes audio input signal through A/V Jack and PC audio and Tuner IF.

The analyzed signals transmitted to audio amplifier (YDA138)

On decoding, We can control signal like Bass, treble.

4. Flash Memory(MX25L4005A)

This is composed of MX25L4005A.

This store the source data of micom.

5. Tuner

Micom controls this IC through IIC line.

Tuner makes CVBS and transmits IF signal to LGE9689/9789AD-LF.

6. Audio Amplifier (YDA138)

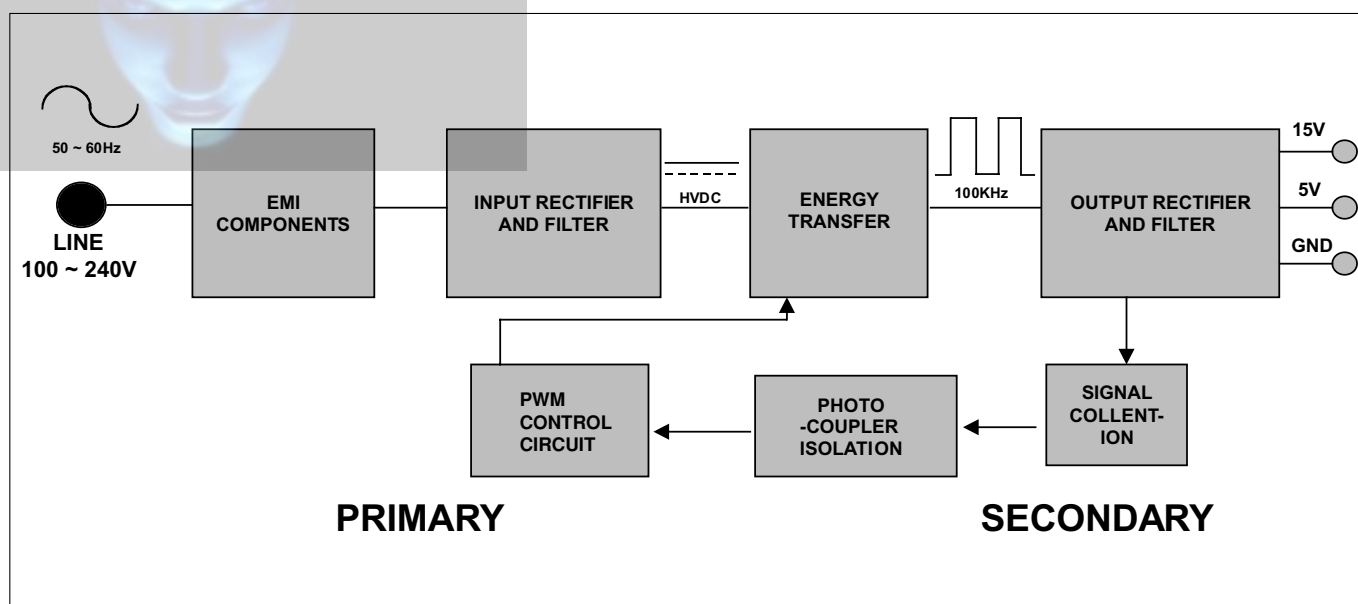
This block is composed of YDA138 and peripheral device.

The function of the audio amplifier is that to amplify audio L / R signal transmitted from audio decoder.

The audio signal is amplified according to pre-defined DC volume control curve.

Also, headphone amplifier is included at this IC.

LIPS Board Block Diagram



Operation description_LIPS

1. EMI components.

This part contains of EMI components to comply with global marketing EMI standards like FCC,VCCI CISPR, the circuit included a line-filter, across line capacitor and of course the primary protection fuse.

2. Input rectifier and filter.

This part function is for transfer the input AC voltage to a DC voltage through a bridge rectifier and a bulk capacitor.

3. Energy Transfer.

This part function is for transfer the primary energy to secondary through a power transformer.

4. Output rectifier and filter.

This part function is to make a pulse width modulation control and to provide the driver signal to power switch, to adjust the duty cycle during different AC input and output loading condition to achieve the dcoutput stabilized, and also the over power protection is also monitor by this part.

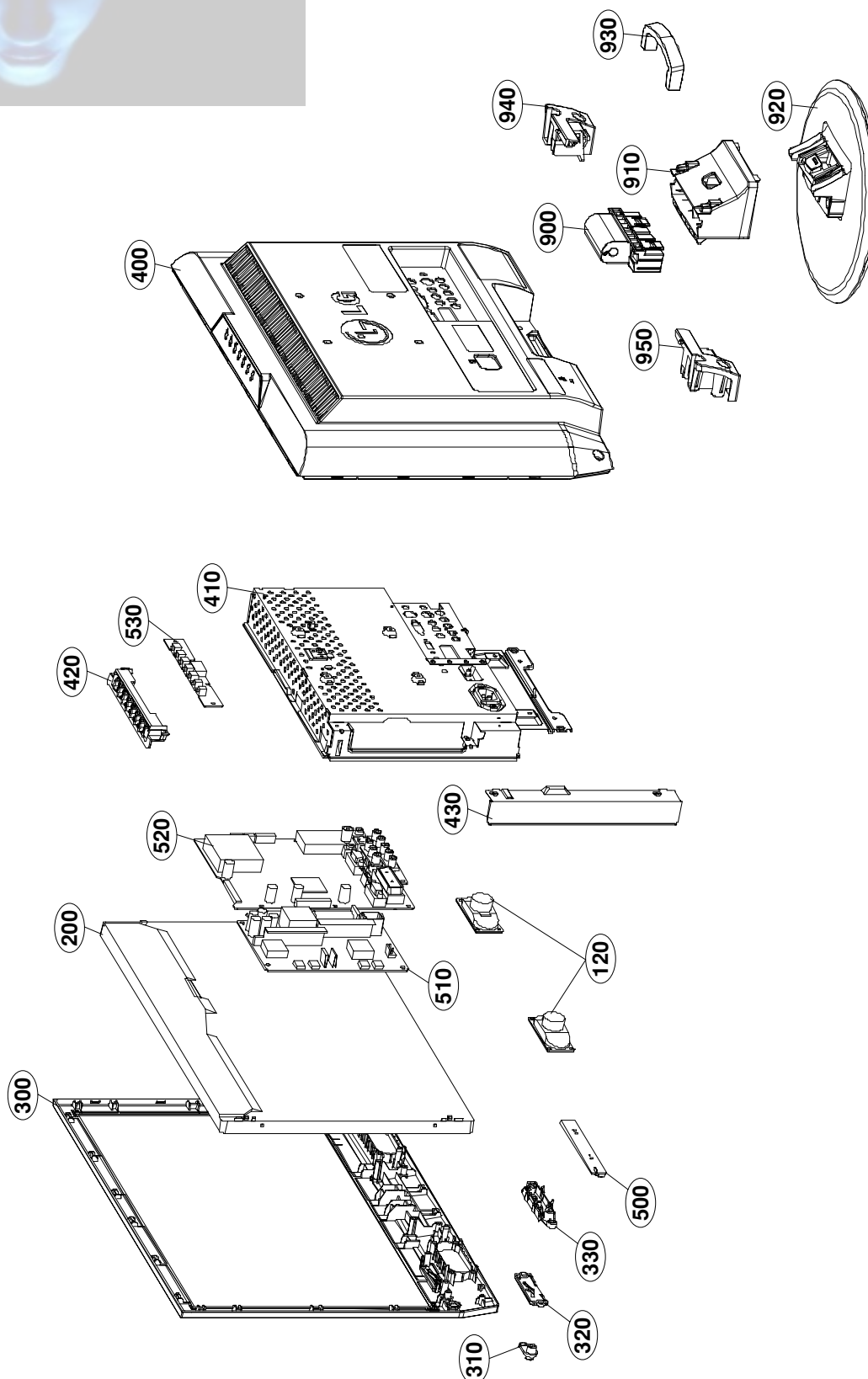
5. Photo-Coupler isolation.

This part function is to feed back the DC output changing status through a photo transistor to primary controller to achieve the stabilized DC output voltage.


6. Signal collection.




This part function is to collect the any change from the DC output and feed back to the primary through photo transistor.

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

* Note: Safety mark 

No.	Part No.	Description
120	EAB32761501	Speaker,Full Range, L07030A-027 ND35 3W 16OHM 85DB 300HZ 30 X 70 X 22 SOLDER SUNLINK COMPANY
	200	EAJ36290801 LCD,Module-TFT, LM190WX1-TLC1 DRIVER 19INCH 1440X900 300CD COLOR 72% 16/10 850:1 5ms, MAGNA source D-IC, OKI gate D-IC, TLI T-con, 160/160, P7 LG PHILIPS LCD
	EAJ33945801	LCD,Module-TFT, LM220WE1-TLA1 DRIVER 22.0INCH 1680X1050 300CD COLOR 72% 16/10 800:1 160/160 5ms 4LAMPS LG PHILIPS LCD
	300	ABJ32323201 Cabinet Assembly, M198W . 19" M198W CABINET ASSY BLACK
	ABJ32411701	Cabinet Assembly, M228WA M228WA_CABINET ASS'Y 21" M228WA CABINET ASS'Y (22")
	310	MES35944701 Indicator, MOLD PMMA NON MX8W PMMA NON MX8W Model IR lens
	320	MES35721501 Indicator, MOLD PMMA LED M198W PMMA NON M198W LED LENS
	330	MBG35721401 Button, MOLD ABS HF-350 POWER M198W ABS 1KEY M198W POWER KNOB (BK)
	400	ACQ32323322 Cover Assembly,Rear, m198wa BB3 19" M198WA BACK COVER ASSY_7KEY_SOUTH AMERICA_W/SVC LABEL
	ACQ32411823	Cover Assembly,Rear, M228WA M228WA BACK_COVER ASS'Y ETC M228WA BACK COVER ASSY _SOUTH AMERICA VERSION(WITH SVC LABEL)
	410	ADV31008062 Frame Assembly, M198WA -BTH LP69G(BB3) 19" METAL FRAME ASSY M198WA BB3, NON EU
	ADV31008064	Frame Assembly, M228WA -BTH LP69G(BB3) ETC METAL FRAME ASSY M228WA BB3,NON EU
	420	MEY35721301 Knob, MOLD ABS HF-350 SUB 7KEY M198W M198W TACT KNOB BK
	430	MGJ35722501 Plate,Shield, PRESS SBHG 0.6T FRAME EGI M198W LAMP WIRE SHIELD (0.6T)
	500	EBR35410101 PCB Assembly,Sub, LED & P/SW T.T LP69G M198WA/M208WA/M228WA AEUGLPX BRAND
	510	6871TPT318G PCB Assembly,Power, PLLM-M602C POWER T.T CMO L225W 22"Wide Scaler Dimming FREQUENCY CHANGE LG INNOTEK CO., LTD
	520	EBU35388016 Main Total Assembly, M198WA -BMH for Chile BRAND LP69G
	EBU35388018	Main Total Assembly, M228WA -BMH for Chile BRAND LP69G
	530	EBR35409501 PCB Assembly,Sub, CONTROL T.T LP69G M198WA/M208WA/M228WA AEUGLPX BRAND
	600	MKJ33981413 Remote Controller, COMPLEX LP69B LS1R W/O TXT , W/O PIP , CONTINENT OF ASIA
	900	AAN31022505 Base Assembly, STAND m228w/22ls4r CL81 m228w/22ls4rHINGE COVER ASSY
	910	MAZ35721601 Bracket, MOLD ABS HF-350 COVER M198W - ABS M198W STAND BODY (BLACK)
	920	AAN32323501 Base Assembly, BASE M198W - M8W MODEL STAND BASE ASSY
	AAN32323502	Base Assembly, BASE M228W - M8W MODEL STAND BASE ASSY& METAL BASE
	930	MCK30233401 Cover, MOLD HIPS 51SF LS1R HIPS 51SF LS1R-holder cable management
	940	MCK30246601 Cover, MOLD ABS 380 15LS1R ABS, HF-380 15LS1R-Cover hinge L
	950	MCK30246901 Cover, MOLD ABS 380 15LS1R ABS, HF-380 15LS1R Cover hinge R

REPLACEMENT PARTS LIST

DATE: 2007. 06. 20.

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
ACCESSORY					
A1	MFL37805907	ManualPRINTING USER - BRAND M198W	C1124	0CE477EH618	"Capacitor,AL,RadialKMG5.0TP25VB47"
A2	6410TEW011A	Power CordIMO LP-22 & H05VV-F 0.7	C1125	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"
	or 6410TEW001C	Power CordSP-28 IS-14 H05VV-F 3GX	C1126	0CE227WF6DC	"Capacitor,AL,ChipMVK8.0TP16VC220M"
A3	130-013B	"Battery,ManganeseR03(STC) 1.5V 1"	C1127	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
A4	68509F0003A	"Cable,AssemblyD-SUB TO D-SUB UL20"	C1128	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
	or 6850TD9007D	"Cable,Assembly6850TD9007D D-SUB C"	C1129	0CE227WF6DC	"Capacitor,AL,ChipMVK8.0TP16VC220M"
A5	68509J0004A	"Cable,AssemblyDVI-D TO DVI-D UL20"	C1130	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
A6	6852TAZ006P	"Cable,AssemblyKCA-ST-3-0010 STERE"	C1133	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
A7	SAB30693407	S/W PackageM198WA/M208WA/M228WA c	C114	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
CAPACITORS			C1148	0CE475WJ6DC	"Capacitor,AL,ChipMVK4.0TP35VC4.7M"
C1001	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C1149	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C1002	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C1150	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"
C1003	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C1151	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"
C1004	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C1153	0CK105CD56A	"Capacitor,Ceramic,ChipC1608X7R1A1"
C1005	0CC561CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"	C1154	0CK105CD56A	"Capacitor,Ceramic,ChipC1608X7R1A1"
C1006	0CC561CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"	C1155	0CK105CD56A	"Capacitor,Ceramic,ChipC1608X7R1A1"
C1007	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C1156	0CK105CD56A	"Capacitor,Ceramic,ChipC1608X7R1A1"
C1008	0CC561CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"	C1157	0CK105CD56A	"Capacitor,Ceramic,ChipC1608X7R1A1"
C1009	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C116	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C101	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C117	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C1010	0CC331CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"	C118	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C1011	0CC561CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"	C119	0CE106WFKDC	"Capacitor,AL,ChipMVK4.0TP16VC10M"
C1012	0CK563CK56A	"Capacitor,Ceramic,ChipC1608X7R1H5"	C121	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C1013	0CK563CK56A	"Capacitor,Ceramic,ChipC1608X7R1H5"	C122	0CK224CF56A	"Capacitor,Ceramic,Chip0603B224K16"
C1014	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"	C123	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C103	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C124	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C104	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C125	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C105	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C126	0CC560CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"
C106	0CC220CK41A	"Capacitor,Ceramic,ChipC1608C0G1H2"	C127	0CC560CK41A	"Capacitor,Ceramic,ChipC1608C0G1H5"
C107	0CC220CK41A	"Capacitor,Ceramic,ChipC1608C0G1H2"	C128	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1100	0CE477EH618	"Capacitor,AL,RadialKMG5.0TP25VB47"	C129	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1101	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"	C130	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1102	0CK474DH56A	"Capacitor,Ceramic,ChipC2012X7R1E4"	C131	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1105	0CE477EH618	"Capacitor,AL,RadialKMG5.0TP25VB47"	C132	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1106	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C133	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1108	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"	C134	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1109	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C135	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1111	0CK474DH56A	"Capacitor,Ceramic,ChipC2012X7R1E4"	C136	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1113	0CK103CK56A	"Capacitor,Ceramic,Chip0603B103K50"	C137	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1114	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C138	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1115	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"	C139	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1118	0CK272CK46A	"Capacitor,Ceramic,Chip0603B272J50"	C140	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1119	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C141	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C112	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"	C142	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1120	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"	C143	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
C1122	0CK226FF67A	"Capacitor,Ceramic,ChipEMK325BJ226"	C144	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
			C145	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"
			C146	0CK102CK56A	"Capacitor,Ceramic,Chip0603B102K50"
			C147	0CK473CK56A	"Capacitor,Ceramic,ChipC1608X7R1H4"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C148	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C149	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C150	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C151	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C152	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C153	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C154	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C155	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C156	0CK473CK56A	"Capacitor, Ceramic, ChipC1608X7R1H4"
C157	0CC561CK41A	"Capacitor, Ceramic, ChipC1608C0G1H5"
C158	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C159	0CE106WFKDC	"Capacitor, AL, ChipMVK4.0TP16VC10M"
C160	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C161	0CC561CK41A	"Capacitor, Ceramic, ChipC1608C0G1H5"
C162	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C163	0CK475CC94A	"Capacitor, Ceramic, ChipC1608Y5V0J4"
C164	0CK105CD56A	"Capacitor, Ceramic, ChipC1608X7R1A1"
C165	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C166	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C167	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C168	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C169	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C170	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C171	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C172	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C173	0CK103CK56A	"Capacitor, Ceramic, Chip0603B103K50"
C174	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C175	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C176	0CK225DD66A	"Capacitor, Ceramic, ChipLMK212JB225"
C177	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C178	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C179	0CK103CK56A	"Capacitor, Ceramic, Chip0603B103K50"
C180	0CK103CK56A	"Capacitor, Ceramic, Chip0603B103K50"
C181	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C182	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C183	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C185	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C186	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C187	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C188	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C189	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C190	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C191	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C192	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C193	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C194	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C195	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C196	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C197	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C198	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C199	0CE106WFKDC	"Capacitor, AL, ChipMVK4.0TP16VC10M"
C200	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C202	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C204	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C205	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C301	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C302	0CK103CK56A	"Capacitor, Ceramic, Chip0603B103K50"
C303	0CC101CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C304	0CC101CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C305	0CC101CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C306	0CC470CK41A	"Capacitor, Ceramic, ChipC1608C0G1H4"
C307	0CC101CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C308	0CC101CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C309	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C310	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C311	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C312	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C313	0CK475CC94A	"Capacitor, Ceramic, ChipC1608Y5V0J4"
C400	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C4000	0CN1040K949	"Capacitor, Ceramic, AxialCH UP050 F"
C4001	0CN1040K949	"Capacitor, Ceramic, AxialCH UP050 F"
C401	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C402	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C403	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C404	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C405	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C406	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C407	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C408	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C409	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C500	0CK225DH94A	"Capacitor, Ceramic, ChipC2012Y5V225"
C501	0CE476WH6DC	"Capacitor, AL, ChipMVK8.0TP25VC47M"
C502	0CK224CF56A	"Capacitor, Ceramic, Chip0603B224K16"
C503	0CK224CF56A	"Capacitor, Ceramic, Chip0603B224K16"
C504	0CK474DK56A	"Capacitor, Ceramic, ChipUMK212BJ474"
C505	0CK105CD56A	"Capacitor, Ceramic, ChipC1608X7R1A1"
C506	0CE107WF6DC	"Capacitor, AL, ChipMVK6.3TP16VC100M"
C507	0CK475EF56A	"Capacitor, Ceramic, ChipC3216X7R1C4"
C508	0CK475EF56A	"Capacitor, Ceramic, ChipC3216X7R1C4"
C509	0CK105CD56A	"Capacitor, Ceramic, ChipC1608X7R1A1"
C510	0CE337WH6DC	"Capacitor, AL, ChipMVK10TP25VC330M"
C511	0CK475EF56A	"Capacitor, Ceramic, ChipC3216X7R1C4"
C512	0CK105DH56A	"Capacitor, Ceramic, ChipC2012X7R105"
C513	0CE337WH6DC	"Capacitor, AL, ChipMVK10TP25VC330M"
C514	0CK475EF56A	"Capacitor, Ceramic, ChipC3216X7R1C4"
C515	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C516	0CE106WFKDC	"Capacitor, AL, ChipMVK4.0TP16VC10M"
C517	0CK105CD56A	"Capacitor, Ceramic, ChipC1608X7R1A1"
C518	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C519	0CK104CK56A	"Capacitor, Ceramic, Chip0603B104K50"
C520	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C521	0CK474DK56A	"Capacitor, Ceramic, ChipUMK212BJ474"
C522	0CK224CF56A	"Capacitor, Ceramic, Chip0603B224K16"
C523	0CK224CF56A	"Capacitor, Ceramic, Chip0603B224K16"
C524	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C525	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C526	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"
C527	0CC102CK41A	"Capacitor, Ceramic, ChipC1608C0G1H1"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
C528	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C529	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C530	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C531	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C600	0CK103CK56A	"Capacitor,Ceramic,Chip0603B103K50"
C601	0CC390CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"
C602	0CK103CK56A	"Capacitor,Ceramic,Chip0603B103K50"
C603	0CC390CK41A	"Capacitor,Ceramic,ChipC1608C0G1H3"
C604	0CK103CK56A	"Capacitor,Ceramic,Chip0603B103K50"
C605	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"
C606	0CE107WF6DC	"Capacitor,AL,ChipMVK6.3TP16VC100M"
C607	0CK273CK56A	"Capacitor,Ceramic,Chip0603B273K50"
C608	0CK273CK56A	"Capacitor,Ceramic,Chip0603B273K50"
C609	0CH5151K416	"Capacitor,Ceramic,Chip0805N151J50"
C701	0CC101CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C702	0CC680CK41A	"Capacitor,Ceramic,ChipC1608C0G1H6"
C703	0CC101CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C704	0CC680CK41A	"Capacitor,Ceramic,ChipC1608C0G1H6"
C705	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C706	0CC680CK41A	"Capacitor,Ceramic,ChipC1608C0G1H6"
C707	0CC680CK41A	"Capacitor,Ceramic,ChipC1608C0G1H6"
C708	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C709	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C710	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C711	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C712	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C713	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C714	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C715	0CK474CH94A	"Capacitor,Ceramic,Chip0603F474Z25"
C716	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C717	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C718	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C719	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C720	0CK104CK56A	"Capacitor,Ceramic,Chip0603B104K50"
C900	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
C901	0CC102CK41A	"Capacitor,Ceramic,ChipC1608C0G1H1"
DIODEs		
D1101	0DR340009AA	"Diode,SchottkyMBRS340 525MV 40V 4"
D500	0DS181009AA	"Diode,SwitchingKDS181 1.2V 85V 30"
D501	0DS181009AA	"Diode,SwitchingKDS181 1.2V 85V 30"
D502	0DS181009AA	"Diode,SwitchingKDS181 1.2V 85V 30"
D701	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D702	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D703	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D704	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D705	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D706	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D707	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D708	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D709	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D710	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"
D711	0DS226009AA	"Diode,SwitchingKDS226 1.2V 85V 30"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
D712	0DSON00138A	"Diode,SchottkyMMBD301LT1G 600MV 3"
D713	0DSON00138A	"Diode,SchottkyMMBD301LT1G 600MV 3"
D714	0DD184009AA	Diode AssemblyKDS184 KDS184 TP KE
D715	0DD184009AA	Diode AssemblyKDS184 KDS184 TP KE
ZD1000	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1005	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1006	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1007	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1008	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1009	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1010	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1011	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1013	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1014	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1015	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1016	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1017	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1018	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1019	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1020	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1021	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD1034	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD2001	0DZ560009CF	"Diode,ZenerMTZJ5.6B 5.6V 5.45TO5."
ZD4000	0DZ560009CF	"Diode,ZenerMTZJ5.6B 5.6V 5.45TO5."
ZD4001	0DZ560009CF	"Diode,ZenerMTZJ5.6B 5.6V 5.45TO5."
ZD701	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD702	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD703	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD704	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD705	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD708	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD709	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD710	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD900	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD901	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD902	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD903	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD904	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD905	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD906	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ZD907	0DZ560009GB	"Diode,ZenerBZT52C5V6S-(F) 5.6V 5."
ICs		
IC100	EAN33715803	"IC,Video ProcessorsLGE9689AD-LF 3"
IC103	0IMMRAL026C	"IC,EEPROMAT24C64AN-10SU-2.7 64KBI"
IC1100	0IMCRAU004A	"IC,LDO Voltage RegulatorS1117-33P"
IC1101	0IPMG78346A	"IC,LDO Voltage RegulatorAZ1085S-A"
IC1102	0IMCRMZ001A	"IC,DC,DC ConverterMP1583DN-Z,LF 4"
IC1104	0IPMG00107A	"IC,LDO Voltage RegulatorAZ1117H-2"
IC1105	0IPMGRH001G	"IC,LDO Voltage RegulatorBA33BC0FP"
IC1107	0ISS780500H	"IC,Voltage RegulatorKA78M05RTM 7T"
IC400	EAN32205201	"IC,DDR SDRAMHY5DU281622FTP-5 128M"
IC500	EAN33643401	"IC,Audio AmplifierYDA138-EZ(D-3)"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
IC701	0IMMR00014A	"IC,EEPROMM24C02-RMN6TP 2KBIT 256X"
IC702	0IMMR00014A	"IC,EEPROMM24C02-RMN6TP 2KBIT 256X"
COILs & FILTERs & INDUCTORs		
L1104	61409B0002A	"Coil,ChokeDBF-1030A 30uH - 2.5A 1"
L500	61409B0002A	"Coil,ChokeDBF-1030A 30uH - 2.5A 1"
L501	61409B0002A	"Coil,ChokeDBF-1030A 30uH - 2.5A 1"
L503	61409B0002A	"Coil,ChokeDBF-1030A 30uH - 2.5A 1"
L504	61409B0002A	"Coil,ChokeDBF-1030A 30uH - 2.5A 1"
L1000	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L1001	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L1006	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L1007	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L1113	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L1114	6200J00005E	"Filter,BeadHH-1M2012-601JT 600OHM"
L1115	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L1116	6200J00005E	"Filter,BeadHH-1M2012-601JT 600OHM"
L1117	6200J00005E	"Filter,BeadHH-1M2012-601JT 600OHM"
L505	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L506	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L507	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L508	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L509	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L510	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L511	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L512	6210TCE001G	"Filter,BeadHH-1M3216-501JT 500OHM"
L900	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L901	6210TCE001A	"Filter,BeadHB-1S2012-080JT 8OHM 2"
L1002	0LC0233002A	"Inductor,Multilayer,ChipFI-B2012-"
L1003	0LC0233002A	"Inductor,Multilayer,ChipFI-B2012-"
L1004	0LC0233002A	"Inductor,Multilayer,ChipFI-B2012-"
TRANSISTORs & FETs		
Q1102	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q300	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q302	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q303	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q304	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q305	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q500	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q501	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q600	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q601	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q602	0TR387500AA	"TR,Bipolar2SC3875S(ALY) NPN 5V 60"
Q603	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q606	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q607	0TR150400BA	"TR,Bipolar2SA1504S(ASY) PNP -5V -"
Q307	EBK32753101	FETSI4925BDY P-CHANNEL MOSFET -30

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
RESISTORs		
AR400	0RJ1000C687	"Resistor,ArrayRCA86TRJ100R 100OHM"
AR401	0RJ1000C687	"Resistor,ArrayRCA86TRJ100R 100OHM"
AR410	0RJ1000C687	"Resistor,ArrayRCA86TRJ100R 100OHM"
AR411	0RJ1000C687	"Resistor,ArrayRCA86TRJ100R 100OHM"
R1000	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1001	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1002	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R1003	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R1004	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R1005	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1006	0RJ1502D677	"Resistor,ChipMCR03EZPJ153 15KOHM"
R1007	0RJ1502D677	"Resistor,ChipMCR03EZPJ153 15KOHM"
R1008	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R1009	0RJ9101D677	"Resistor,ChipMCR03EZPJ912 9.1KOHM"
R101	0RJ1004D477	"Resistor,ChipMCR03EZPF105 1MOHM 1"
R1010	0RJ9101D677	"Resistor,ChipMCR03EZPJ912 9.1KOHM"
R1011	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1012	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R1013	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R1014	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1015	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R1016	0RJ1202D677	"Resistor,ChipMCR03EZPJ123 12KOHM"
R1017	0RJ1202D677	"Resistor,ChipMCR03EZPJ123 12KOHM"
R102	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R1021	0RJ0152D677	"Resistor,ChipMCR03EZPJ150 150HM 5"
R1022	0RJ0152D677	"Resistor,ChipMCR03EZPJ150 150HM 5"
R103	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R105	0RJ1201D677	"Resistor,ChipMCR03EZPJ122 1.2KOHM"
R106	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R107	0RJ4700D677	"Resistor,ChipMCR03EZPJ471 470OHM"
R108	0RH0000D622	"Resistor,ChipMCR10EZHJ000 0OHM 5%"
R109	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R1103	0RJ1101D677	"Resistor,ChipMCR03EZPJ112 1.1KOHM"
R1104	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R1105	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R1106	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R1107	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R111	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R1110	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R1115	0RJ6801D477	"Resistor,ChipMCR03EZPF682 6.8KOHM"
R1116	0RJ1053D477	"Resistor,ChipMCR03EZPF1053 105KOH"
R1117	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R1118	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R112	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R1130	0RJ1500D477	"Resistor,ChipMCR03EZPF151 150OHM"
R1131	0RJ0752D477	"Resistor,ChipMCR03EZPF750 750HM 1"
R114	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R1140	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R1141	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R1146	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R1147	0RJ3300D677	"Resistor,ChipMCR03EZPJ331 330OHM"
R115	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R1150	0RX0102K665	"Resistor,Metal Oxide FilmRSD02F4J"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R1153	0RJ1053D477	"Resistor,ChipMCR03EZPF1053 105KOH"
R116	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R117	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R118	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R119	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R120	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R121	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R122	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R123	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R124	0RJ4700D677	"Resistor,ChipMCR03EZPJ471 470OHM"
R125	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R126	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R127	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R128	0RJ0562D677	"Resistor,ChipMCR03EZPJ560 56OHM 5"
R129	0RJ4700D677	"Resistor,ChipMCR03EZPJ471 470OHM"
R130	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R131	0RJ0562D677	"Resistor,ChipMCR03EZPJ560 56OHM 5"
R132	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R133	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R134	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R135	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R136	0RJ0562D677	"Resistor,ChipMCR03EZPJ560 56OHM 5"
R137	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R138	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R139	0RJ0472D677	"Resistor,ChipMCR03EZPJ470 47OHM 5"
R140	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R141	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R142	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R143	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R144	0RJ3900D677	"Resistor,ChipMCR03EZPJ391 390OHM"
R148	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R153	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R154	0RJ1202D677	"Resistor,ChipMCR03EZPJ123 12KOHM"
R155	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R156	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R157	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R158	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R159	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R162	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R163	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R165	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R166	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R167	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R168	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R173	0RJ2202D677	"Resistor,ChipMCR03EZPJ223 22KOHM"
R174	0RJ2202D677	"Resistor,ChipMCR03EZPJ223 22KOHM"
R183	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R184	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R185	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R186	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R187	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R190	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R191	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R192	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R193	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R194	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R196	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R198	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R201	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R202	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R203	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R204	0RJ3301D677	"Resistor,ChipMCR03EZPJ332 3.3KOHM"
R205	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R206	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R207	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R208	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R209	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R212	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R213	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R214	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R215	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R216	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R217	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R218	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R219	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R223	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R224	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R225	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R228	0RJ3301D677	"Resistor,ChipMCR03EZPJ332 3.3KOHM"
R229	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R231	0RJ3301D677	"Resistor,ChipMCR03EZPJ332 3.3KOHM"
R232	0RJ3301D677	"Resistor,ChipMCR03EZPJ332 3.3KOHM"
R235	0RJ3301D677	"Resistor,ChipMCR03EZPJ332 3.3KOHM"
R238	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R239	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R242	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R245	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R249	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R250	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R252	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R253	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R254	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R256	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R259	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R260	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R264	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R267	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R300	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R302	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R303	0RH2001D622	"Resistor,ChipMCR10EZHJ202 2KOHM 5"
R304	0RH2001D622	"Resistor,ChipMCR10EZHJ202 2KOHM 5"
R305	0RH0000D622	"Resistor,ChipMCR10EZHJ000 0OHM 5%"
R310	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R311	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R312	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R313	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R314	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R315	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R316	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R319	0RH2001D622	"Resistor,ChipMCR10EZHJ202 2KOHM 5"
R320	0RH2001D622	"Resistor,ChipMCR10EZHJ202 2KOHM 5"
R4000	0RN6801F409	"Resistor,Metal FilmRN-96T1F6K80 6"
R4001	0RN2201F409	"Resistor,Metal FilmRN-96T1F2K20 2"
R4002	0RN1001F409	"Resistor,Metal FilmRN-96T1F1K00 1"
R4003	0RN6801F409	"Resistor,Metal FilmRN-96T1F6K80 6"
R4004	0RN2201F409	"Resistor,Metal FilmRN-96T1F2K20 2"
R4005	0RN1001F409	"Resistor,Metal FilmRN-96T1F1K00 1"
R402	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R403	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R404	0RJ0222D677	"Resistor,ChipMCR03EZPJ220 22OHM 5"
R405	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R406	0RJ1500D677	"Resistor,ChipMCR03EZPJ151 150OHM"
R407	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R408	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R409	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R500	0RJ1003D677	"Resistor,ChipMCR03EZPJ104 100KOHM"
R501	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R502	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R504	0RJ1500D677	"Resistor,ChipMCR03EZPJ151 150OHM"
R505	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R508	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R509	0RJ1003D677	"Resistor,ChipMCR03EZPJ104 100KOHM"
R510	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R511	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R513	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R514	0RJ1003D677	"Resistor,ChipMCR03EZPJ104 100KOHM"
R515	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R516	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R518	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R600	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R601	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R602	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R603	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R604	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R605	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R606	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R607	0RJ4700D677	"Resistor,ChipMCR03EZPJ471 470OHM"
R608	0RJ3300D677	"Resistor,ChipMCR03EZPJ331 330OHM"
R609	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R610	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R611	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R622	0RJ2700D677	"Resistor,ChipMCR03EZPJ271 270OHM"
R631	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R633	0RJ1500D677	"Resistor,ChipMCR03EZPJ151 150OHM"
R636	0RJ1000D677	"Resistor,ChipMCR03EZPJ101 100OHM"
R637	0RJ1500D677	"Resistor,ChipMCR03EZPJ151 150OHM"
R638	0RJ2700D677	"Resistor,ChipMCR03EZPJ271 270OHM"
R701	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R702	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R703	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R704	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R705	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"

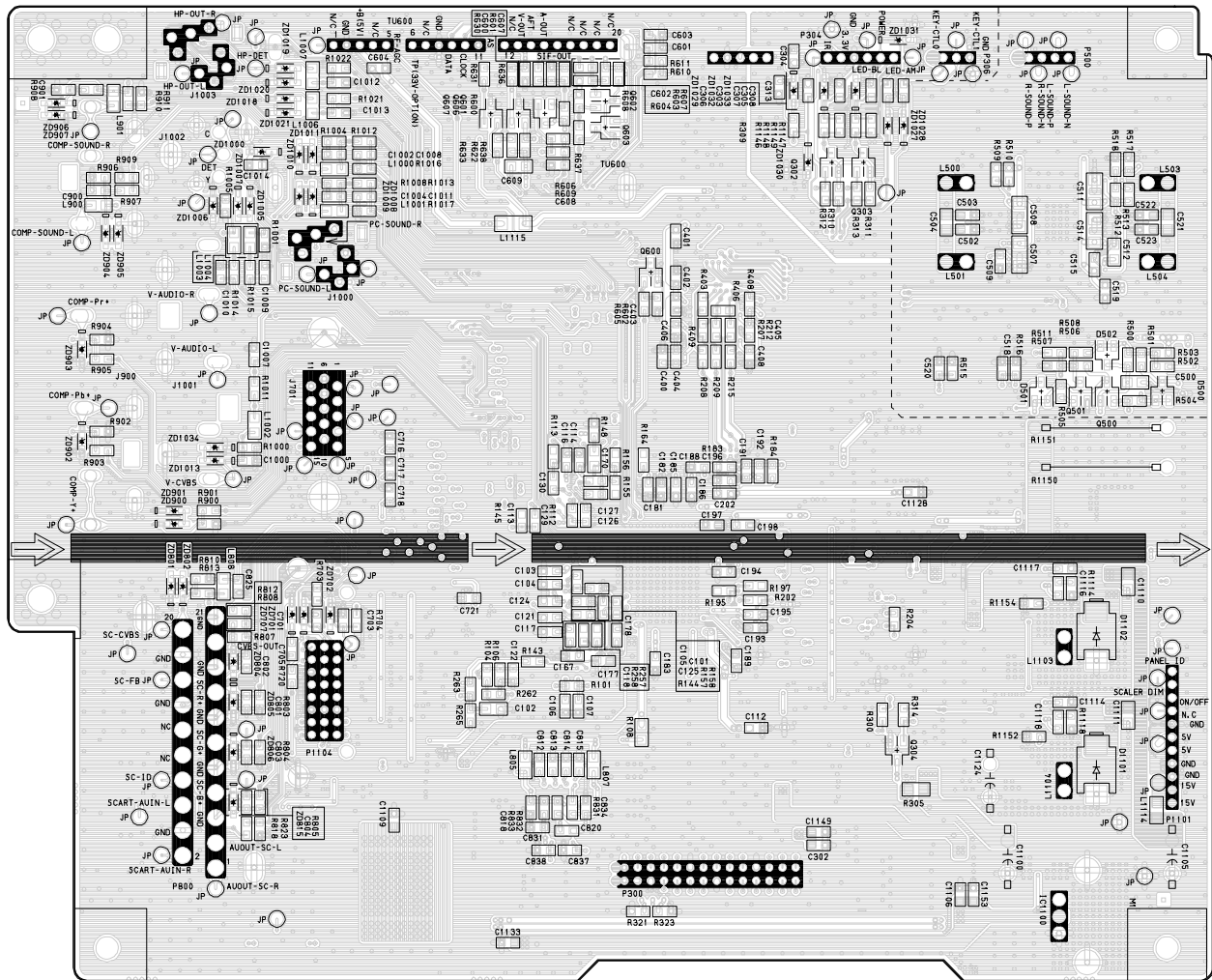
LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
R706	0RJ0332D677	"Resistor,ChipMCR03EZPJ330 33OHM 5"
R707	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R708	0RJ0682D677	"Resistor,ChipMCR03EZPJ680 68OHM 5"
R709	0RJ0682D677	"Resistor,ChipMCR03EZPJ680 68OHM 5"
R710	0RJ0752D677	"Resistor,ChipMCR03EZPJ750 75OHM 5"
R711	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R712	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R713	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R714	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R715	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R716	0RJ0102D677	"Resistor,ChipMCR03EZPJ100 10OHM 5"
R717	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R718	0RJ0182D677	"Resistor,ChipMCR03EZPJ180 18OHM 5"
R719	0RJ0182D677	"Resistor,ChipMCR03EZPJ180 18OHM 5"
R720	0RJ1001D677	"Resistor,ChipMCR03EZPJ102 1KOHM 5"
R721	0RJ0752D677	"Resistor,ChipMCR03EZPJ750 75OHM 5"
R722	0RJ0000D677	"Resistor,ChipMCR03EZPJ000 0OHM 5%"
R723	0RJ0752D677	"Resistor,ChipMCR03EZPJ750 75OHM 5"
R724	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R725	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R726	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R727	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R728	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R729	0RJ4701D677	"Resistor,ChipMCR03EZPJ472 4.7KOHM"
R900	0RJ0752D477	"Resistor,ChipMCR03EZPF750 75OHM 1"
R901	0RJ0222D677	"Resistor,ChipMCR03EZPJ220 22OHM 5"
R902	0RJ0752D477	"Resistor,ChipMCR03EZPF750 75OHM 1"
R903	0RJ0222D677	"Resistor,ChipMCR03EZPJ220 22OHM 5"
R904	0RJ0752D477	"Resistor,ChipMCR03EZPF750 75OHM 1"
R905	0RJ0222D677	"Resistor,ChipMCR03EZPJ220 22OHM 5"
R906	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R907	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R908	0RJ4703D677	"Resistor,ChipMCR03EZPJ474 470KOHM"
R909	0RJ1102D677	"Resistor,ChipMCR03EZPJ113 11KOHM"
R910	0RJ1002D677	"Resistor,ChipMCR03EZPJ103 10KOHM"
R911	0RJ1102D677	"Resistor,ChipMCR03EZPJ113 11KOHM"
CONNECTORS		
C1	6631900109A	"Harness,Single(FOOSUNG)DCE153B-23"
C2	6631900011H	"Harness,SingleSMH200 SMH200 450mM"
C3	6631900022P	"Harness,SingleSMH200-3P SMH200-3P"
C4	6631T20023A	"Harness,SingleSMH200-11 SMH200-11"
J701	6630TGA004H	"Connector,DSUBKCN-DS-0-0089 D-SUB"
P1101	6602T20008K	"Connector,WaferSMW200-11P 11P 2.0"
P1104	6630TGA005J	"Connector,DSUBQH01121-HWK-PF DVI"
P2001	6602T20009E	"Connector,WaferMAW200-06P 6P 2.0"
P300	6630V90219A	"Connector,WaferSMW200-28C 28P 2.0"
P304	6602T20009E	"Connector,WaferMAW200-06P 6P 2.0"
P306	6602T20009B	"Connector,WaferMAW200-03P 3P 2.0"
P4000	6602T20009B	"Connector,WaferMAW200-03P 3P 2.0"
P500	6602T20009C	"Connector,WaferMAW200-04P 4P 2.0"

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
JACKs		
J1000	6612F00099A	"Jack,PhonePEJ024-01 1P 4P STRAIGH"
J1001	6612J10026A	"Jack,RCARCA-359HA-00A-01G 14.0MM"
J1002	6612F00024C	"Jack,DINPSJ014-01 SOCKET 4P ANGLE"
J1003	6612F00099A	"Jack,PhonePEJ024-01 1P 4P STRAIGH"
J900	6612J10031B	"Jack,RCAPPJ209-01 14.0MM 1RX3C AN"
SWITCHs		
SW2001	140-058E	"Switch,TactTHVV502GBC 1C1P 12VDC"
SW4000	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4001	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4002	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4003	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4004	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4005	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
SW4006	140-058B	"Switch,TactEVQPB205K 1C1P 15VDC 0"
OTHERs		
B1	MAY36479301	BoxBOX SW 508 141 410 2 COLOR M19
IC102	SAA30949101	"S/W,Firmware3.00 9614 CENTRAL AND"
IC2001	6712SCA232A	Receiver ModuleTSOP34838SO1 2.7TO
LED2001	0DLGP0080AA	"LED,DIPGP34052ME/P507-ZSY-50-HB R"
P1	400-C02Q	PackingCOMPLEX 47LC DW -
P2	MFZ34905701	PackingMOLD EPS M198W EPS Brand L
TU600	EBL35311204	"Tuner,Tuner/ModulatorTAFT-H003F N"
X100	6202VDT002B	CrystalSX-1 14.31818MHZ 30PPM(16P

LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION

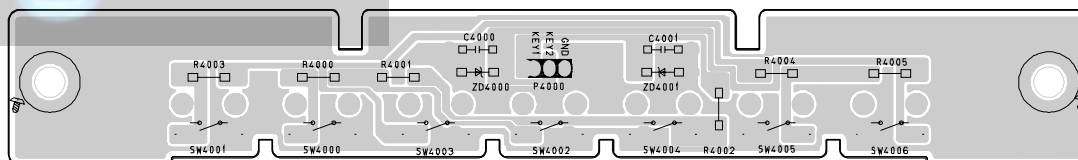


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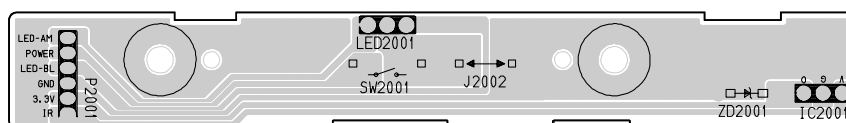




CONTROL

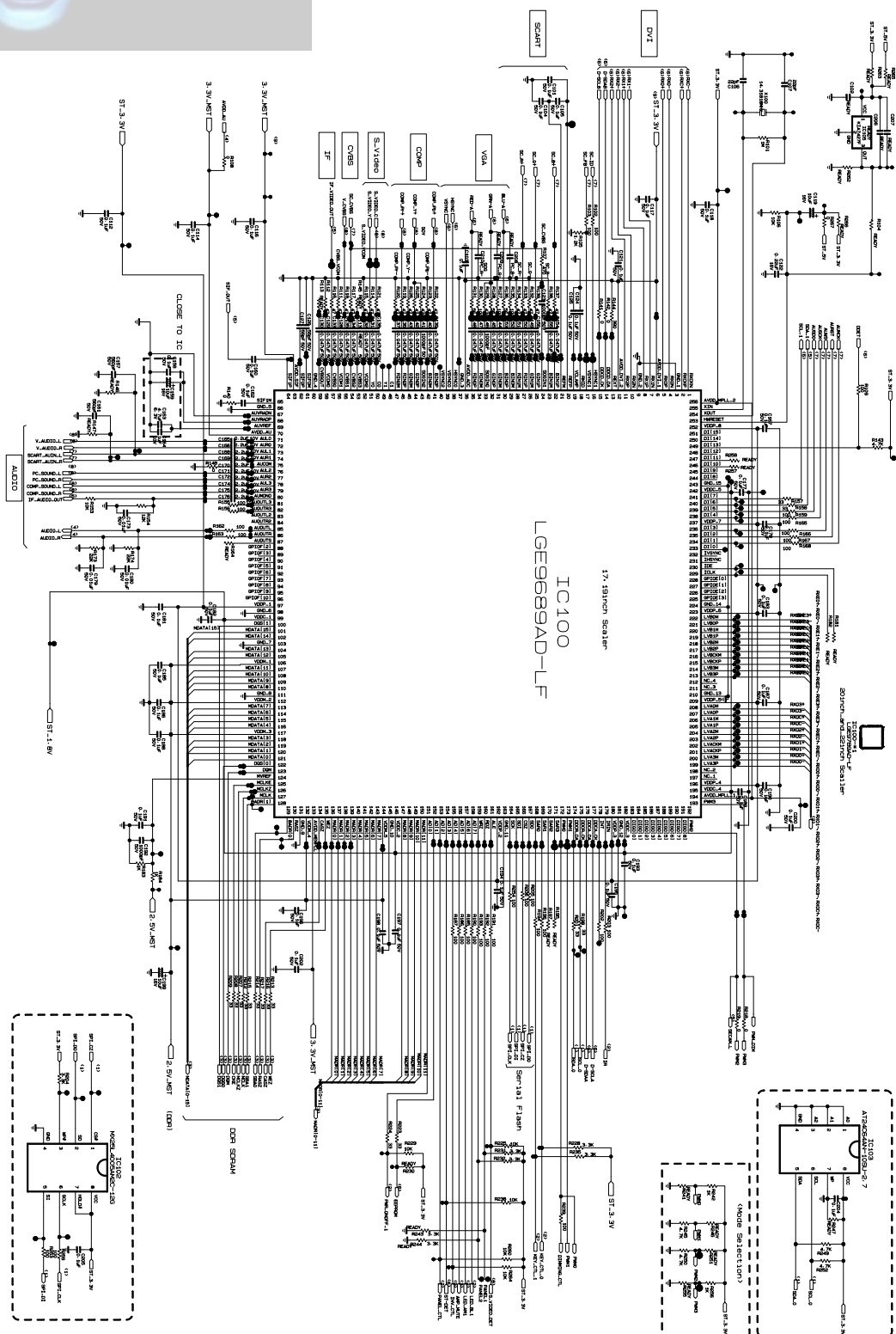


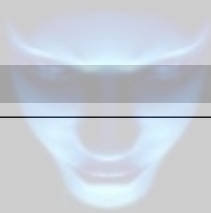
LED & P/SW



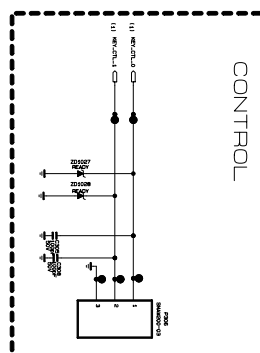
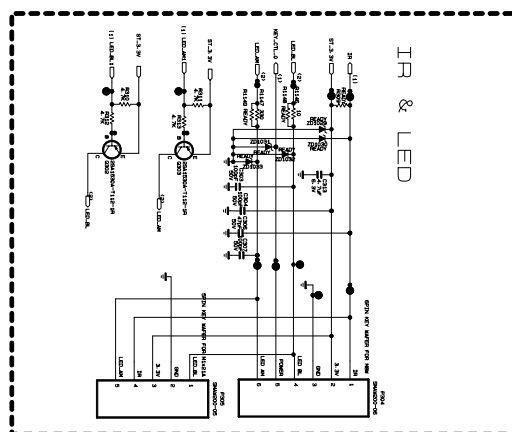
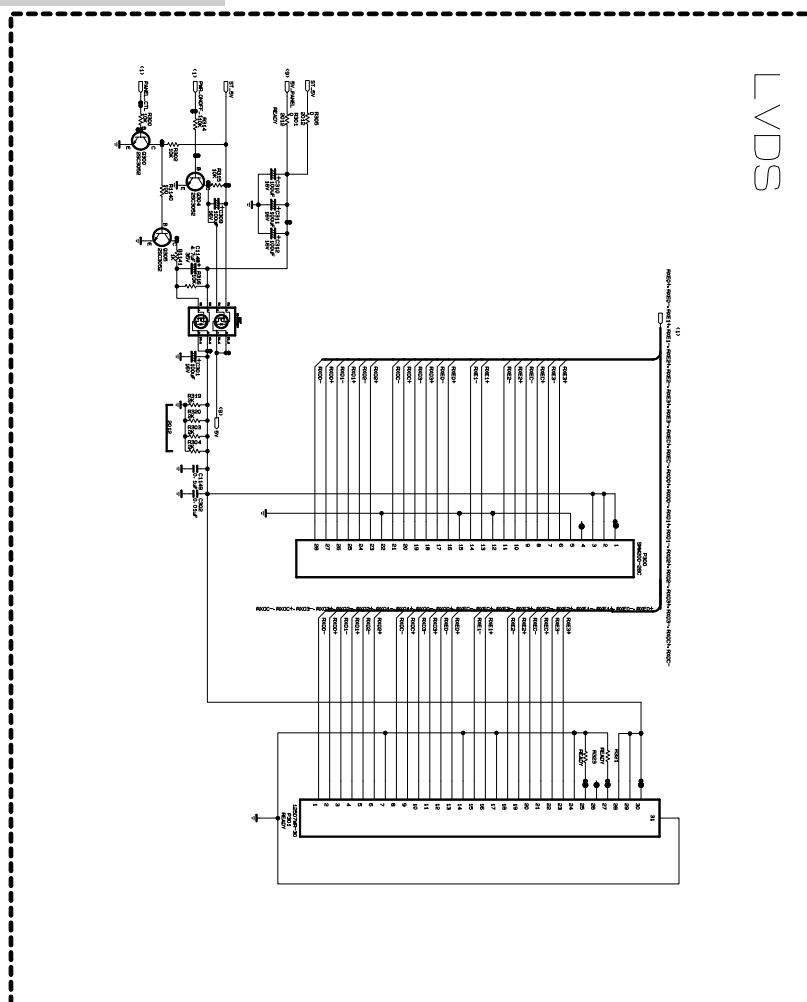
SCHEMATIC DIAGRAM

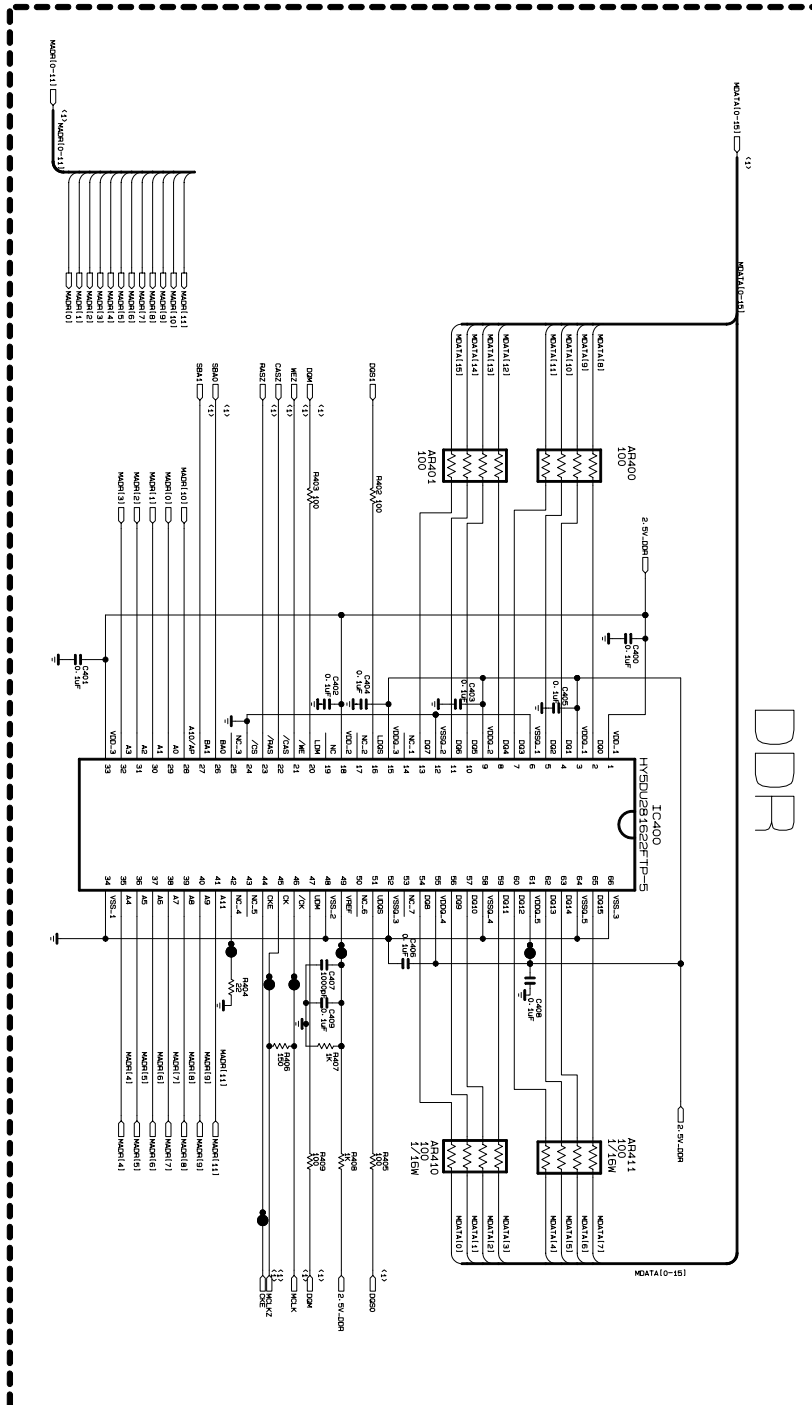
1. MSTAR



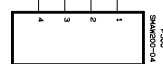


2. PANEL & CONNECTOR

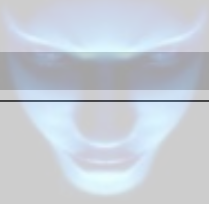




AUDIO AMP

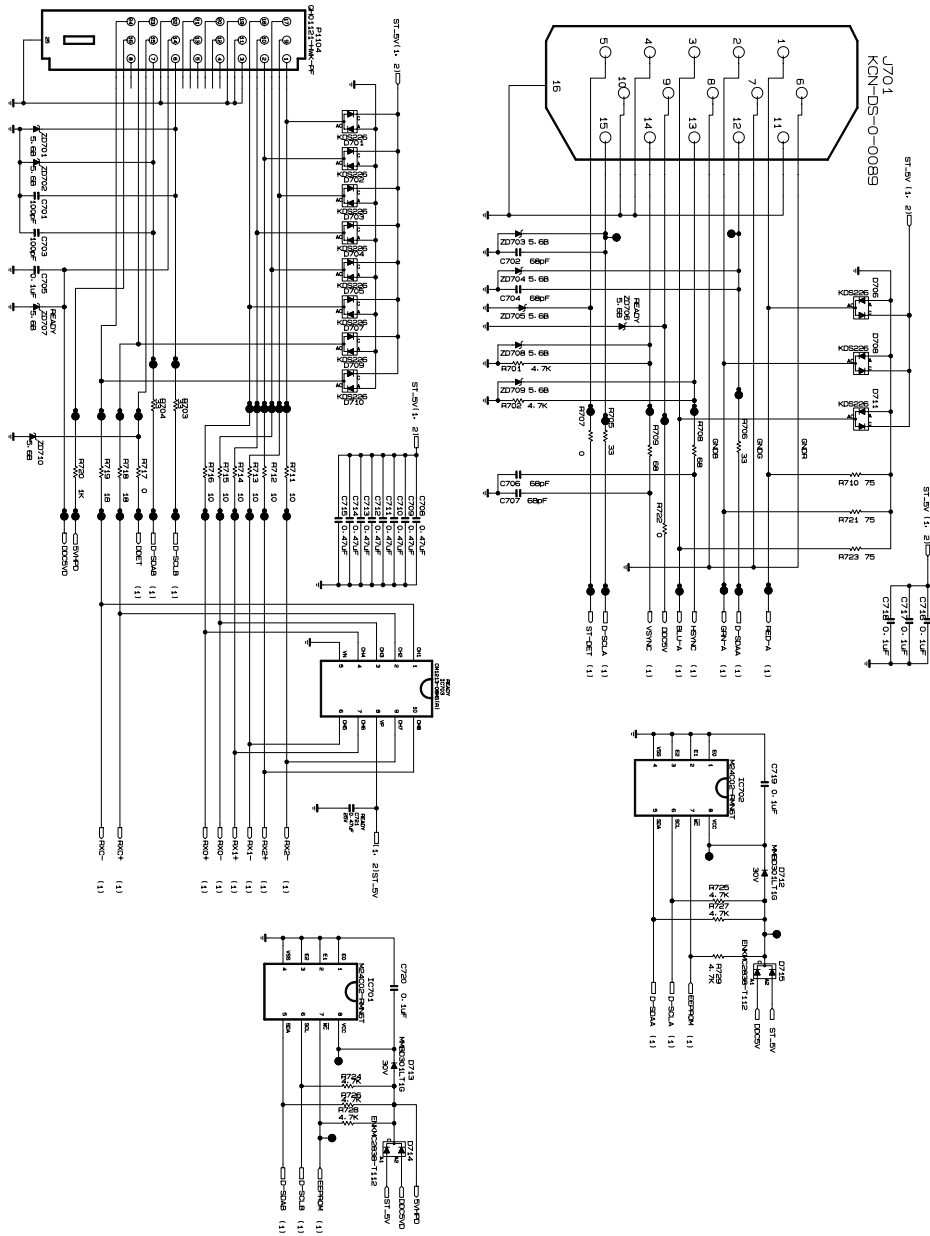






6. D-SUB & DVI

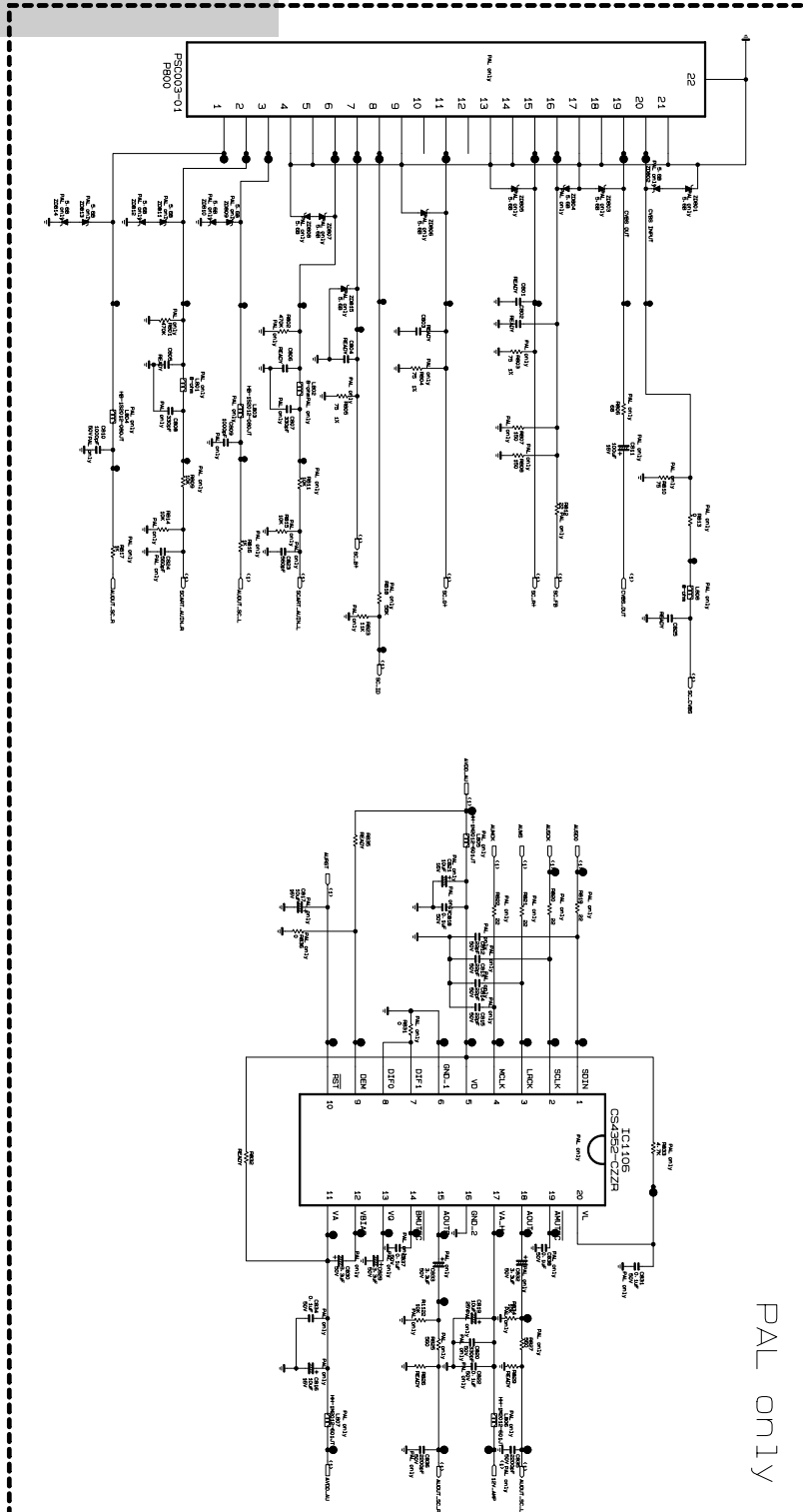
D-SUB & DVI





7. SCART & DAC

SCART & DAC

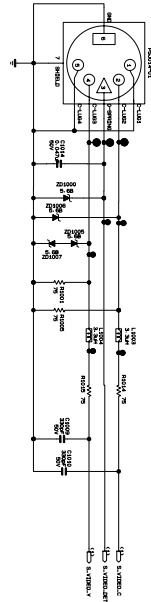


PAL only

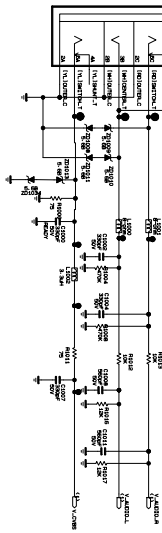


8. JACK

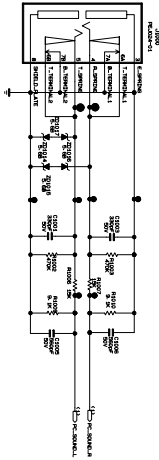
S_Video



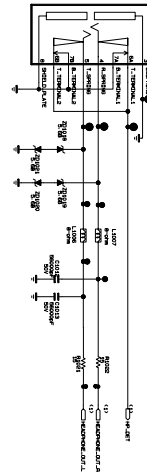
CVBS



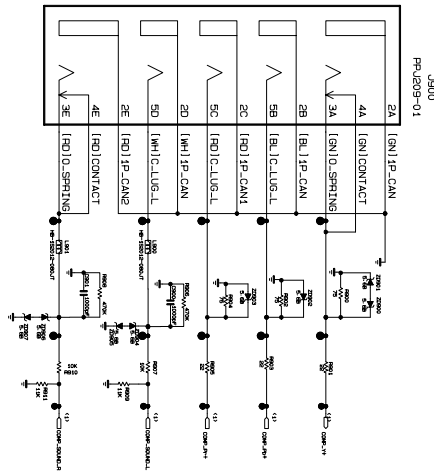
PC SOUND INPUT



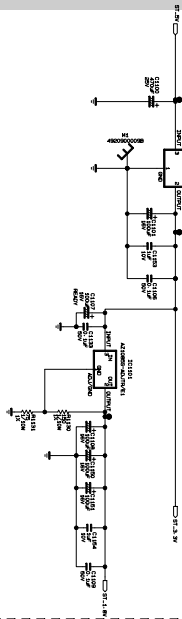
Headphone

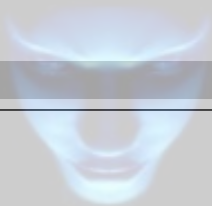


COMPONENT



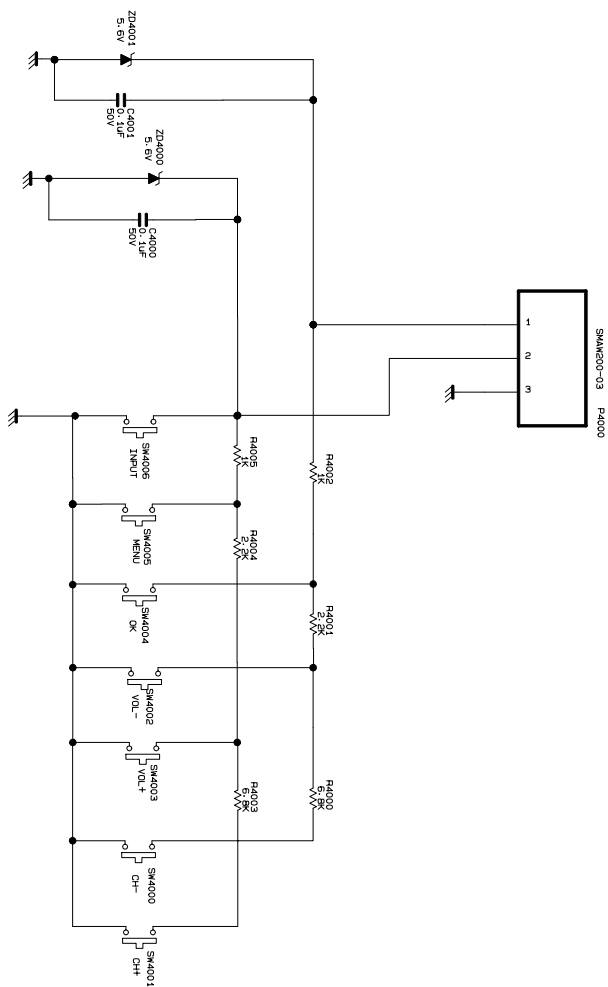
STAND-BY VOLTAGE

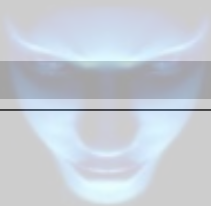
[illegible]



10. CONTROL KEY

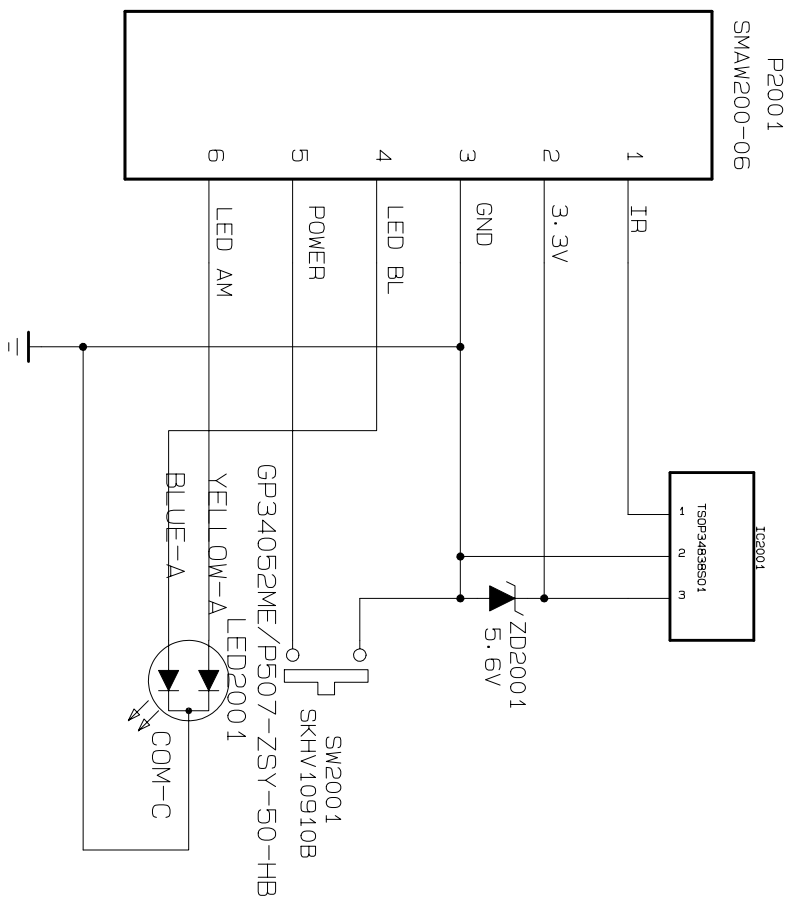
MX8WA CONTROL KEY BOARD





11. IR + LED + POWER

MX8WA IR+LED+POWER BOARD



DT FORUM



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